JVC

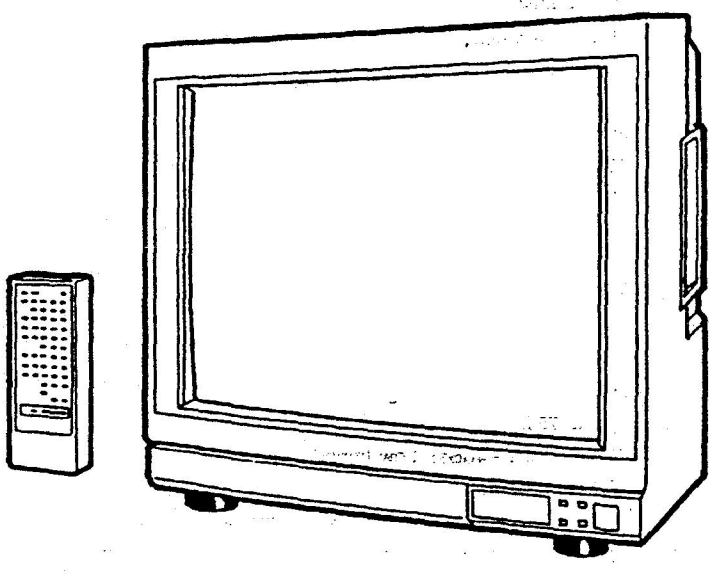
SERVICE MANUAL

55cm COLOUR TV

C-S2181ET

BASIC CHASSIS

BY X



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No.50244
Jun.1989

SPECIFICATIONS

Item	Content
Dimension	50.7cm (W)×47.8cm (D)×46.8cm (H)
Weight	23.7kg
TV RF System	CCIR B/G
Colour System	PAL/SECAM
Tuner	Frequency Synthesizer Euro-wideband Tuner
Receiving Channel & Frequency	
VHF Ch. (V_L : E_2~E_4, ITALY A~C)	47MHz ~ 68MHz
(V_H : E_5~E_{12}, ITALY D~H)	174MHz ~ 230MHz
UHF Ch. (U: E_{21} ~ E_{69})	470MHz ~ 862MHz
CATV Receiving Channel & Frequency	
MID Band (X CH. ~ Z CH)	68MHz ~ 89MHz
HYPER Band (S_1 CH. ~ S_{41} CH)	104MHz ~ 470MHz
Intermediate Frequency	
V IF Carrier	38.9MHz
S IF Carrier	33.4MHz (5.5MHz)
Colour Sub Carrier	PAL (4.43MHz),SECAM (4.40625MHz/4.25MHz)
ANT Input Impedance	75Ω Unbalanced
Power Input	220V AC, 50Hz
Power Consumption	120W (max.), 90W (avg.)
Picture Tube	55cm In-Line Type, Flat-Square Tube
Viewable Picture Size	30.5cm (H)×40.7cm (W)
High Voltage	26.5kV ±1kV (at zero beam current)
Speaker	10cm Round Type, 8Ω×2pcs.
Audio Power Output	5W
Music Power	7W
21 Pin Euroconnector (SCART)	
Video Input	1Vp-p, 75Ω
Audio Input	500mV rms (−4dBs), High Impedance
Video Output	1Vp-p, 75Ω
Audio Output	500mV rms (−4dBs), Low Impedance
R/G/B Input	700mVp-p, 75Ω
Teletext system	Conforms to teletext system of Westgermany and the united kingdom system (compatible with FLOF); built-in European CCT (computer controlled teletext) decoder .
S-Video Input (4 Pin)	Y: 1Vp-p, 75Ω Positive (Negative sync. provided) C: 0.3Vp-p (Burst level), 75Ω
Audio Input (RCA Pin Jack Type)	500mV rms (−4dBs), High Impedance
Tube	1
IC	16 (In TV), 1 (In REMOCON)
Transistor	77 (In TV), 6 (In REMOCON)

Design & specification subject to change without notice.

SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠)on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual many create shock, fire, or other hazards.
4. **Don't short between the LIVE side ground and NEUTRAL side grounding or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (⊥) side GND, the NEUTRAL(⏚) side GND and EARTH (⏚) side GND. Don't short between the LIVE side GND and NEUTRAL side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND or EARTH side GND at the same time. If above note will not be kept, a fuse or any parts will be broken.
5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B_1 POWER SUPPLY).
6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approvided by the manufacturer of the complete product.
7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.
9. **Isolation Check**
   (Safety for Electrical Shock Hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.) Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

• Alternate Check Method
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement, Any voltage measured must not exceed 0.35V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).

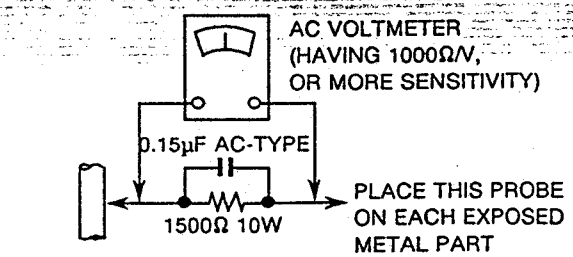


Fig.A

EATURES

b power supply circuit has been eliminated by using the ain switch circuit of power-source circuit to supply power to V power source for microcomputer and −30 V power urce for memory.

HOLD and H. HOLD are deleted as a result of employment IC with built-in deflection circuit that adopts the count-down ethod for V./H. OSC.

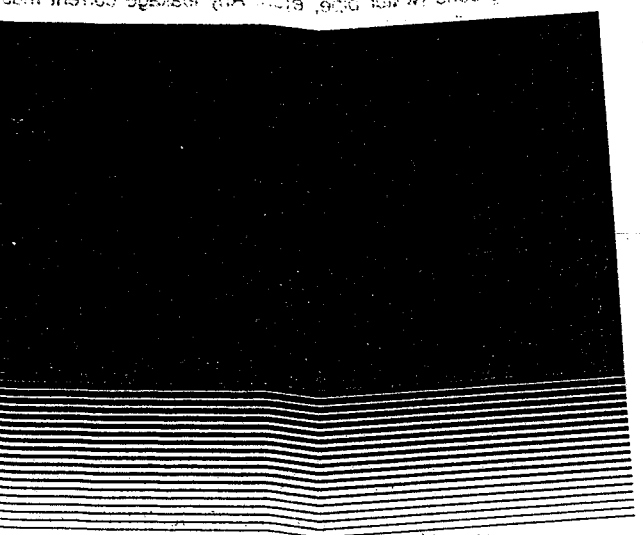
ewly incorporated is an off-timer with functions of max. 2- our time setting in 30-min. units and of time remaining dication

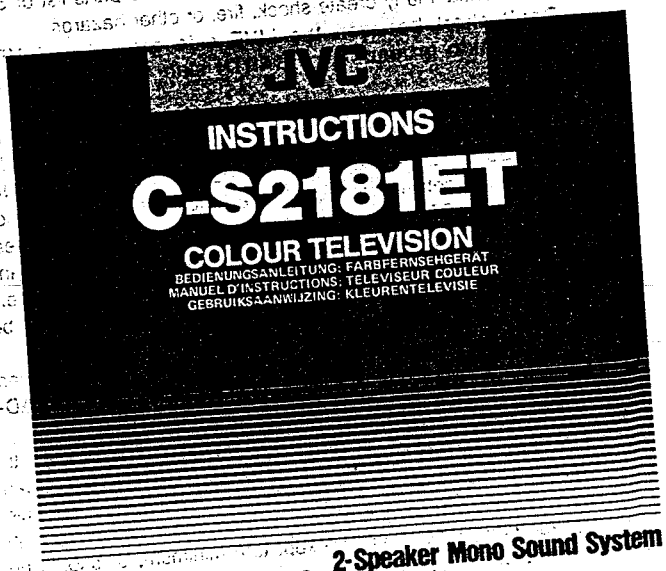
n on-timer also offers max. 24-hour time setting in 1-hour nits plus time remaining indication function.

ultifunctional remote control system enables control via the and held remote commander of many of the receiver's unctions.

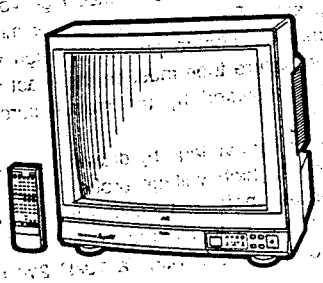
- Built-in teletext decoder for viewing teletext programmes.
- 4-Pin S-VIDEO (separated video) input terminal for direct connection to a super VHS video recorder, taking full advantage of the new, superior-quality Super VHS video format.
- 21-Pin Euroconnector (SCART) for connecting external equipment.
- VSM (Video Status Memory) stores fine-adjustment settings of the picture for each source mode independently: TV, Video 1 and Video 2.
- Multi-colour on-screen display with 3-language selection (English/German/French).

PERATING INSTRUCTIONS





2-Speaker Mono Sound System



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WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT. EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION: TO INSURE PERSONAL SAFETY, OBSERVE THE FOLLOWING RULES REGARDING THE USE OF THIS UNIT.

1. Operate only from the power source specified on the unit.
2. Avoid damaging the AC plug and power cord.
3. Avoid improper installation and never position the unit where good ventilation is unattainable.
4. Do not allow objects or liquid into the cabinet openings.
5. In the event of trouble, unplug the unit and call a service technician. Do not attampt to repair it yourself or remove the rear cover.

Caution:
When you do not use this TV set for a long period of time, be sure to disconnect the power plug from the AC outlet.

Note:
This TV set has a pair of built-in speakers; however, the output sound can be listened to only in monaural.

Thank you for purchasing a JVC colour TV set. Your new TV set carries many useful features. To ensure your complete understanding, please read all instructions in this booklet before operation.

FEATURES

- Built-in Teletext decoder for viewing Teletext programmes.
- 4-Pin S-VIDEO input terminal for direct connection to a Super VHS video recorder, taking full advantage of the new, superior-quality Super VHS video format.
- 21-Pin Euroconnector (SCART) for connecting external equipment.
- On Timer/Off Timer for automatic switch-on/-off of the TV.
- VSM (Video Status Memory) stores fine-adjustment settings of the picture for each source mode independently: TV, VIDEO1 and VIDEO2.
- Full-function unified remote control; including operations for specific JVC video recorders.
- Multi-colour on-screen display with 3-language selection (English/German/French).

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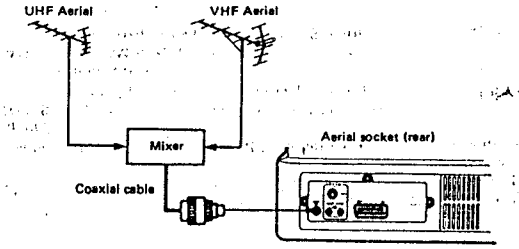
INSTALLATION

AERIAL CONNECTIONS

An outdoor aerial is recommended for better TV picture reception. (For installation of the outdoor aerial system, consult your local dealer.)

Example



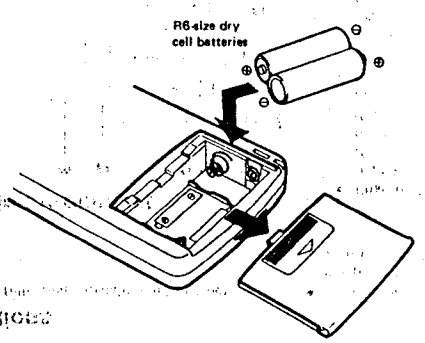
REMOTE CONTROL USE

Correct Use

- Point to the Remote Control Sensor ⓡ of the TV set.
- The maximum operable distance is approximately 7 meters from the Remote Control Sensor, and no more than 30° to either side of centre.
- Operation of the Remote Control is most effective when there is nothing between it and the Remote Control Sensor.
- Duration of the batteries is approximately 6 months to 1 year. (Duration varies according to frequency of use.) Replace the batteries when the remote operation becomes unstable.

Battery Installation/Notes

- Press and slide the cover in the direction of the arrow.
- Correctly install the batteries, observing (+/–) polarities as shown.
- Do not use a combination of old and new batteries or batteries of different types.
- If batteries become exhausted, remove and replace them soon.
- If Remote Control will not be used for more than 2 weeks, remove batteries.
- When battery leakage occurs, clean the battery compartment with a soft cloth and replace the batteries.



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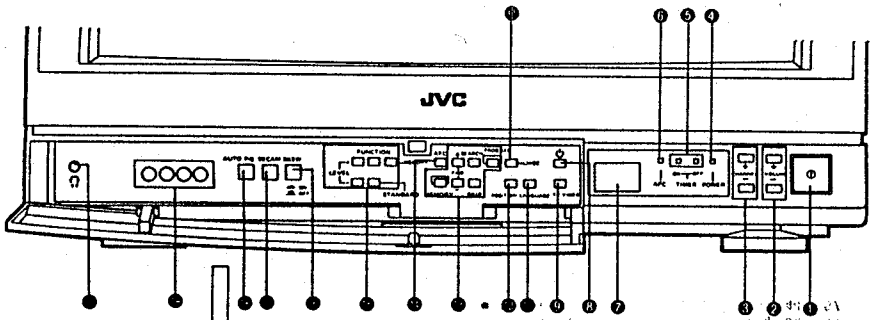
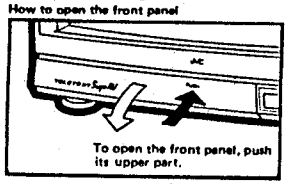
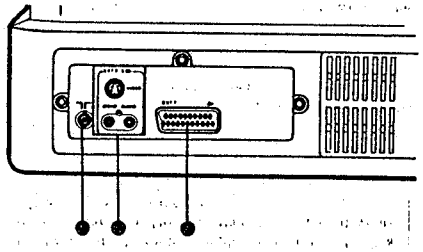
Front Panel Control Section



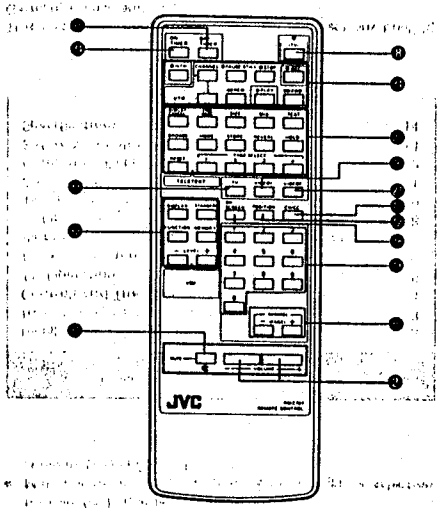
How to open the front panel



Rear Panel Control Section



Remote Control Section



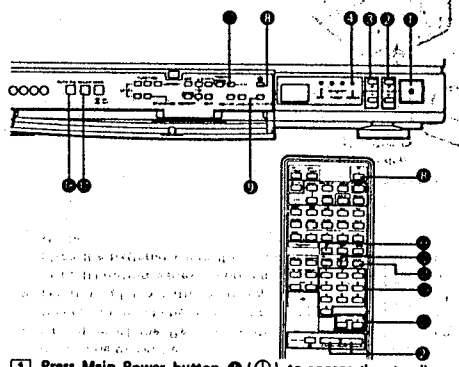
❶ Main Power button (⏻)
❷ VOLUME (+/–) buttons
❸ CHANNEL (+/–) buttons
❹ POWER indicator
❺ TIMER indicators
❻ AFC indicator
❼ Remote Control sensor
❽ Power button (⏻)
❾ TV/VIDEO button
❿ LANGUAGE button
⓫ CH/CC button
⓬ POSITION button
⓭ Channel preset section
⓮ AFC button
⓯ VSM (Video Status Memory) operating section (Front Panel)
⓰ SKEW button
⓱ SECAM button
⓲ AUTO P/S button
⓳ Service adjustment controls*
⓴ Headphone jack
㉑ EXT1 connector
㉒ S-VIDEO/AUDIO connectors
㉓ Aerial socket
㉔ VTR operating section
㉕ TELETEXT operating section
㉖ VIDEO1 button
㉗ VIDEO2 button
㉘ ON SCREEN button
㉙ 10-Digit keypad
㉚ CHANNEL (PAGE) (–/+) buttons
㉛ MUTE button (🔇)
㉜ VSM (Video Status Memory) operating section (Remote Control)
㉝ TV button
㉞ ON TIMER button
㉟ OFF TIMER button

* The adjustment controls for service personnels only. Do not turn them by yourself.

First Preparations

- Connect aerial by following "Installation" instructions on page 3.
- Connect the power cord to the AC outlet. Do not defeat the plug. If you have difficulty to insert the plug, consult your local dealer.

Basic Operating Procedure



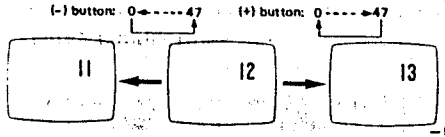
1 **Press Main Power button ❶ (⏻) to engage the standby mode.** The POWER indicator ❹ lights. Press again to turn the main power off. Keep this button set to the ON (standby) position. Only a small amount of current is used.

2 **Press Power button ❽ (⏻) either on the Remote Control or front panel to turn the power on.**
Note: If Main Power button ❶ is switched off while Power button is on, the TV set can be switched on again using only the Main Power button.

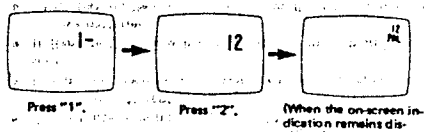
3 **Press TV button ⓭ on the Remote Control or TV/VIDEO button ❾ on the front panel to engage the TV mode.**
Note: Each time the TV/VIDEO button is pressed, the mode changes in the following order.

4 **Press either AUTO P/S button ⓲ or SECAM button ⓱ as required.**
AUTO P/S: Automatically switches between PAL and SECAM colour systems according to the incoming video signal.
SECAM: If SECAM reception is poor (pictures blurred or distorted) when the AUTO P/S button pressed.

5 **Press CHANNEL (PAGE) (–/+) buttons ⓭ on the Remote Control or CHANNEL (+/–) buttons ❸ to select the desired Channel Position.**
Pressing the (+) button advances to a higher-number Channel Position, (–) button to a lower-number.

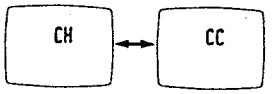


- Channel Positions can be selected directly by using 10-digit keypad ⓭ on the Remote Control. For example, if you select Channel Position 12, press "1" first, then press "2". For Channel Positions of 1-digit numbers (for example, Channel Position 5), just press "5" or press "0" first, then press "5".
- Channel Positions 0 to 9 can be selected by a single press of an appropriate numeric key. For example, if you select Channel Position 5, press "5". When selecting Channel Positions 0 to 4, it will take about 3 seconds to display the channel on the screen. But when selecting Channel Positions 5 to 9, the picture comes on the screen immediately after pressing the key.

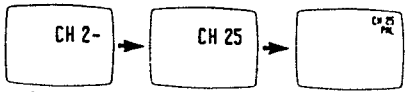


Note: For presetting channels, refer to "PRESETTING CHANNELS" on page 6.

Channel Selection by Real Channel Number
Selecting TV or cable channels by directly keying in the Real Channel number is also possible. Proceed as follows.
1) Press CH/CC button ⓫ to engage the Real Channel mode. After the Real Channel mode is once engaged, each time the CH/CC button is pressed, the TV set changes between "CH" (off-air TV broadcast) and "CC" (cable TV) mode. "CH" or "CC" appears on the screen and blinks to indicate the mode.



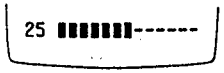
2) Select the desired Real Channel number by using the 10-digit keypad. For example, if you select Channel 25, press "2" first, then press "5". (When selecting channels 01 to 09, be sure to press "0" first.)



3) To return to the Channel Position mode, press POSITION button ⓬ .

Notes:
- When you select channels, also refer to the TV/CABLE CHANNEL CONVERSION CHART on page 7.
- Turning the Main Power off and on in the Real Channel mode releases the Real Channel mode, and the Position mode is engaged. However, turning the power off and on with the power button on the front panel or the Remote Control does not change the mode.

6 Press VOLUME (+/-) buttons ❾ on either the Remote Control or front panel to adjust audio volume to your desired listening level. Pressing (+) button will make the sound louder, the (-) button will make it quieter. The volume level is indicated on the screeen by reference numbers (0 – 50) and by a bar scale, as shown.



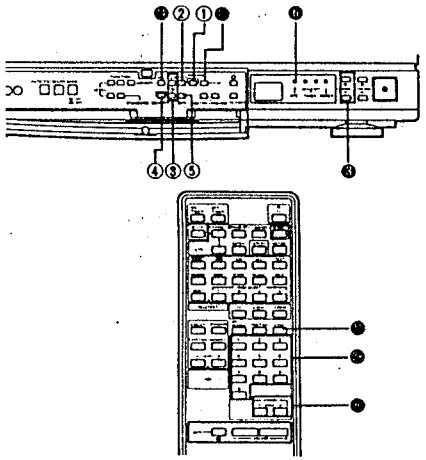
Note: The audio level can be reduced to zero instantly by pressing MUTE button ❽ on the Remote Control. See "MUTE Button" on page 12.

ON-SCREEN DISPLAY

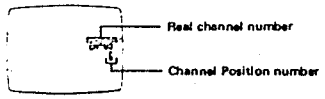
- Once the on-screen indication appears on the TV screen, it disappears in a few seconds. Ordinarily, only the channel number (either the Channel Position or Real Channel) or VIDEO mode, and the colour system (PAL or SECAM) indications can be kept displayed on the screen. See "ON SCREEN Button" on page 12.
- If the broadcast signals being received are weak, the on-screen display may be unclear or blurred.

PRESETTING CHANNELS

Your TV set has a channel memory function that can store up to 48 broadcast stations. Channel Position numbers are available from "0" to "47". Perform presetting TV and/or cable channels as follows.



1 Press PROGRAM button ①. The following display will appear.



2 Press either CHANNEL (+/-) buttons ❻ on the front panel or CHANNEL (PAGE) (-/+) buttons ❽ on the Remote Control to select a desired Channel Position number from "0" to "47".

3 Tune to a channel you wish to store in that Channel Position using either of the following methods. When a broadcast station is tuned, the AFC mode is engaged automatically (Automatic Fine-tuning Control function is activated), and AFC indicator ⓫ lights.

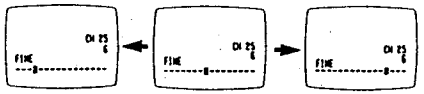
(A) Using SEARCH button ②

Press SEARCH button ②. (Press once slightly. If it is kept pressed, the tuner begins scanning the lower-frequency channels.) The tuner begins automatic scanning of higher-frequency channels. It stops when the nearest broadcast station is reached. Press again until the broadcast you wish to store appears on the screen. If you wish to stop scanning while the automatic scanning is being performed, press SEARCH button ②. By pressing SEARCH button ②, the tuner begins automatic scanning of lower-frequency channels. Release the SEARCH button when a desired station is reached. The scanning stops.

(B) Using the 10-digit keypad ❽

Press CH/CC button ❽ to engage the Real Channel mode. Then after selecting either the CH or CC mode, select the desired Real Channel number you wish to store directly by using the 10-digit keypad. When selecting, refer to the TV/CABLE CHANNEL CONVERSION CHART on the next page.

4 If the tuning is unstable, press FINE (+/-) buttons ⑨ to make fine-tune to the station.



Press FINE (-) button — Tuning reference indicator — Press FINE (+) button

Notes:

- At this time, if the FINE (+/-) buttons are pressed, the AFC mode is released and the AFC indicator goes off. If you wish to engage the AFC mode again, press AFC button. The AFC indicator lights again.
- On-screen display for fine-tuning mode is available in three languages; English, German and French. See "LANGUAGE Button" on page 12.
- The illustration on this page shows an example when the "English" mode is engaged.

5 Press MEMORY button ④ to store the channel in memory at a specific Channel Position.

Note: The setting of the AFC (on or off) is also memorised.

6 Repeat steps 2 to 5 to store channels for up to 48 positions.

7 Press the PROGRAM button ① again to release the PROGRAM mode.

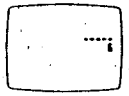
Notes:

- In step 3 above, when performing the auto scanning procedure for higher-frequency channels, if the scanning does not stop at a station due to condition of there being weak signals, etc., press SEARCH again to stop scanning. Then, perform the auto scanning of lower-frequency channels or press either FINE (+/-) buttons to perform fine manual tuning.
- If a broadcast station is not transmitting TV signals because its broadcast time is already over, or because the broadcast has been interrupted for some reason, tuning is not possible with SEARCH button.

Skipping Channel Positions

Channel Positions you do not use can be skipped when the up/down channel selection is performed by pressing the CHANNEL (PAGE) (-/+) buttons ❽ on the Remote Control or the CHANNEL (+/-) buttons ❻ on the front panel.

(1) Press the PROGRAM button ①.
(2) Select the Channel Position you wish to skip.
(3) Press SKIP button ⑤. The following on-screen display appears to show that the Channel Position is skipped.



(4) Repeat above steps for skipping channels as many as you wish.
(5) Press the PROGRAM button again to release the mode.

Notes:

- Channel Positions 20 to 47 have been skipped when shipping.
- Skipped channel positions can be selected using 10-digit keypad ❽
- To cancel a skipped channel position (for example, channel position 10), do the following:
  (1) Using 10-digit keypad ❽, select the skipped channel position (for example, channel position 10) you wish to cancel.
  (2) Press PROGRAM button ① to enter the program mode.
  (3) Press MEMORY button ④.
  (4) Press PROGRAM button ① again to release the mode.

TV/CABLE CHANNEL CONVERSION CHART

DISPLAY	CH02	CH03	CH04	CH05	CH06	CH07	CH08	CH09	CH10	CH11	CH12	CH13	CH14	CH15	CH16	CH17	CH18	CH19	CH20	CH21	CH22	CH23	CH24
CHANNEL	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	A	B	C	D	E	F	G	H	E21	E22	E23	E24
BAND	VL	VL	VL	VH	VH	VH	VH	VH	VH	VH	VH	VL	VL	VL	VH	VH	VH	VH	VH	U	U	U	U
DISPLAY	CH25	CH26	CH27	CH28	CH29	CH30	CH31	CH32	CH33	CH34	CH35	CH36	CH37	CH38	CH39	CH40	CH41	CH42	CH43	CH44	CH45	CH46	CH47
CHANNEL	E25	E26	E27	E28	E29	E30	E31	E32	E33	E34	E35	E36	E37	E38	E39	E40	E41	E42	E43	E44	E45	E46	E47
BAND	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
DISPLAY	CH48	CH49	CH50	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60	CH61	CH62	CH63	CH64	CH65	CH66	CH67	CH68	CH69	CC01
CHANNEL	E48	E49	E50	E51	E52	E53	E54	E55	E56	E57	E58	E59	E60	E61	E62	E63	E64	E65	E66	E67	E68	E69	S1
BAND	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	VH
DISPLAY	CC02	CC03	CC04	CC05	CC06	CC07	CC08	CC09	CC10	CC11	CC12	CC13	CC14	CC15	CC16	CC17	CC18	CC19	CC20	CC21	CC22	CC23	CC24
CHANNEL	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	S23	S24
BAND	VH	VH	VH	VH	VH	VH	VH	VH	VH	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS
DISPLAY	CC25	CC26	CC27	CC28	CC29	CC30	CC31	CC32	CC33	CC34	CC35	CC36	CC37	CC38	CC39	CC40	CC41	CC75	CC76	CC77			
CHANNEL	S25	S26	S27	S28	S29	S30	S31	S32	S33	S34	S35	S36	S37	S38	S39	S40	S41	X	Y	Z			
BAND	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS	VL	VL	VL			

- "CH 13" to "CH 20" are TV channels in Italy.
- "CH 04" and "CH 14" are tuned to the same broadcast receiving frequency; and also "CH 05" and "CH 16" are the same. Therefore, for example, if there is a TV broadcast on "CH 04", this same broadcast can be received on "CH 14" as well.

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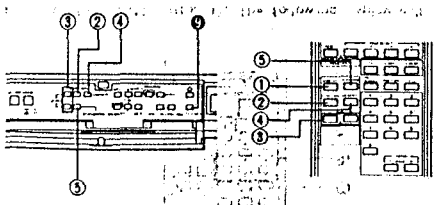
PICTURE ADJUSTMENT/VSM (Video Status Memory) OPERATION

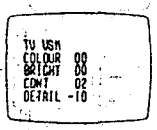
Your TV set incorporates the VSM (Video Status Memory) system that can store preset picture adjustments for each mode (TV, VIDEO1 and VIDEO2), allowing you to keep specific picture adjustments to your preference, depending on each mode (source).

Note: On-screen display for picture adjustment/VSM mode is available in 3 languages: English, German and French. See "LANGUAGE Button" on page 12. Illustrations on this page show the example when the "English" mode is engaged. (The English mode is engaged when shipped.)



1 Press TV/VIDEO button ❾ on the front panel, or TV ⓯ VIDEO1 ⓱ or VIDEO2 ⓲ button on the Remote Control to engage the appropriate mode.

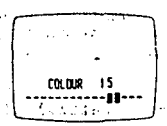
2 Press DISPLAY button ① on the Remote Control. The on-screen display will be:



3 Press FUNCTION button ② either on the front panel or Remote Control to select the desired item for adjustment. Each time the FUNCTION button is pressed, the red-coloured portion shifts in the order below to indicate that the coloured item in the list can be adjusted.

COLOUR → BRIGHT → CONT (Contrast) → DETAIL

- Before pressing the DISPLAY button, if the FUNCTION button is pressed, only one item with its reference scale appears on the screen. Each time it is pressed, the items appearing on the screen changes in the same order as above. See Regular Adjustment procedure on the right.



4 After selecting the desired mode, press LEVEL (+/–) buttons ③ to make your preferred adjustment according to the chart below. (This must be done while the selected mode indication is being displayed, in the case of displaying only one item.) At this time, "00" (the centre position of the scale) is only a reference level, rather than a standard setting. Reference level (number) can be varied from "–30" to "30".

(–)	Item	(+)
Subdued	COLOUR	Vivid
Dark	BRIGHT	Bright
Low	CONT	High
Soft	DETAIL	Sharp

5 If you wish to store the adjustment settings in the VSM, after completing adjustments for all items, press the MEMORY button ④. The display blinks once to indicate that the settings have been memorised.

6 Press the DISPLAY button again to turn off the display.

Notes:
- This VSM setting is effective only for the current mode (TV, VIDEO1 or VIDEO2).
- When you wish to restore all adjustment modes to "00" (their scales' centre position), press STANDARD button ⑤ either on the Remote Control or front panel.
- If you wish to store their standard settings ("00") in memory, press the STANDARD button, then press the MEMORY button. If the MEMORY button is not pressed, the VSM setting which has been previously set cannot be cancelled.

Regular Picture Adjustment Procedure

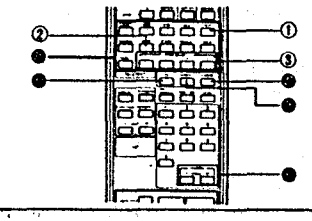
(1) Press the FUNCTION button to select the item you wish to adjust.
(2) Press the LEVEL (–/+) buttons to adjust the item to your preferred level.

Notes:
- After completion of above settings, pressing the MEMORY button ④ will store those settings in the VSM.
- When you change the input mode (TV, VIDEO1 or VIDEO2), the settings restore to the VSM setting which has been previously set.

TELETEXT OPERATION

Your TV set is designed for use with the Videotext system of West Germany and the Fastext system of the United Kingdom. Other Teletext systems of a different standard cannot be received. For details of Teletext broadcasts, consult your local dealer or Teletext company.

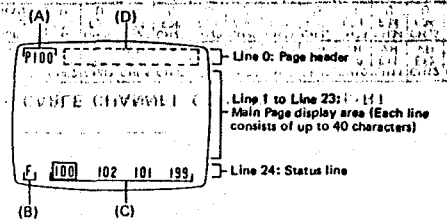
Note: All Teletext control buttons ❿ are located on the Remote Control.



Basic Operating Procedure

Note: Tune in the TV station that is broadcasting Teletext information.

1 Press TEXT button ① to engage the TEXT (Teletext) mode. A Teletext programme appears on the screen. At this time:



(A) The top-left of the screen ("P100" in the example above) shows the current Teletext page number.
(B) The bottom-left ("F" in the example above) shows the current Page access mode. "F" and "L" modes are available. See "MODE" on the next page.
(C) The 4 bottom-right numbers show the Page numbers, each corresponding to the PAGE SELECT 1/2/3/4 buttons on the Remote Control. (The example shows the initial display in the "F" mode.) The one in a coloured box indicates the Page number being selected. If the Page numbers are blinking, it indicates that the TV set is now receiving the data of the Pages.
(D) The Page header includes "magazine (1 digit or character)"/"Page identification (2 digits)", day, date, time and programme source, etc., in addition to (A). "Magazine/Page identification (rolling header)" section changes green when Page scanning, and when reached, restores to white.

2 Press MODE button ② to select either of the "F" or "L" mode.
F: "F" will appear at (B) on the screen. This corresponds to both of the Videotext system of West Germany and the Fastext system of the United Kingdom.
L: "L" will appear at (B). In this mode, the teletext programmes (Pages) which users have stored in the memory can be viewed. For storing teletext programmes, see "STORE" on next page.
Note: After once the Main Power is turned off and on, and the Text mode is engaged, the "F" mode is always engaged initially.

3 Select the desired page number as follows.
1) Using CHANNEL (PAGE) (–/+) buttons ❾:
- Selects the next ("+" button for 1-page higher-number, "–" button for lower-number) Page. For example, if the current displayed Page is "P200", it selects "P201" or "P199".
- Pressing CHANNEL (+/–) buttons ❾ on the front panel performs the same operation.
- Available Page numbers are "P100" to "P899".

2) Using 10-digit keypad:
- For example, if you wish to select Page 450, press "4", "5" and "0". The digits (Page number) you have just keyed in are displayed at (A) and changes to green. The TV set begins the Page searching procedure. The "rolling header" in (D) rolls. When reached, the rolling header stops at the specified Page number, and (A) changes to white from previous green. (When a Page at (A) does not exists, the rolling header continues rolling.)

3) Using PAGE SELECT buttons ③:
(A) When in the "F" mode:
Always certain 4 Pages of Teletext programmes are being received. Press one of the PAGE SELECT buttons corresponding to the Pages numbers at (C) on the screen.
(B) When in the "L" mode:
Press the corresponding PAGE SELECT button to select the Page which has been stored in memory. (For storing Pages, see "STORE".)

Note:
If the Page you selected is a newsflash or a subtitle programme, the regular TV picture remains displayed, and the Teletext information is superimposed, in a black box, on the TV picture. (The Page header and status line disappear after 5 seconds. However, when a new Page is selected, they appear in a box.) In this mode, pressing the MIX button will make the box where the Page header and status line are located disappear.

4 To release the TEXT mode, press either the TV button ❾, VIDEO1 button ⓯ or VIDEO2 button ⓱ on the Remote Control, or TV/VIDEO button ❾ on the front panel.

Special Operating Options

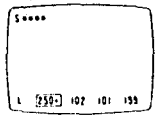
DISPLAY CANCEL

Press DISPLAY CANCEL, then the Teletext display disappears and a regular TV programme will appear. This function is convenient when selecting a certain Page that takes a long time to be reached. For example, if you select "Page 550", key in "5", "5" and "0". Page searching begins. Then, press DISPLAY CANCEL to view the regular TV programme until the Page is reached. When it is reached, the box with "P550" appears to indicate that the Page has been reached.

To release the DISPLAY CANCEL mode, press the TEXT or MIX button. The teletext display appears on the screen.

TIME PAGE

A Teletext station can transmit Sub-Pages that you can select yourself with a 4-digit "time" number which is supplied by the station and specified on a Teletext Page display. Press TIME PAGE, and "S****" appears at (A), replacing the current Page number. Then, key in 4 digits (Time Code) as specified on the display. For example, if the current Page number is "250", and the Time Code is "1234", when the final digit ("4") is keyed in, the Page number in the box at (C) changes to "250+". And the Sub-Page is displayed. To restore the previous Page, key in its Time Code (also specified on the display).



When you wish to select another Page on the Index ("Page 100"), press TIME PAGE again. The "S****" disappears to allow a new Page selection.

- Acceptable Time Code is up to "S3979".
- The Time Code may not correspond to the current time.

SIZE

Press to enlarge the upper half of the Teletext display. Press again to enlarge the lower half. Press again to restore the display to normal size.

MIX

Press to display a regular TV programme behind the selected Teletext Page. To release the Mix mode, press TEXT to restore the Text mode, or press TV, VIDEO1 or VIDEO2 to restore either of these modes.

BROWSE

Press to scan the Pages at random.

MODE

Press to switch the Page access mode between "L" and "F". "L" or "F" will appear on the bottom-left of the screen to indicate the mode. First Main Power is turned on, the "F" mode is always engaged initially.

F mode: For example, when "P150" is selected, "P149", "P150", "P151" and "P152" will be stored in memory automatically. And quick selection of those Pages is possible. (Only when used with the Videotext system.)

L mode: Quick selection of Pages which have been already stored is possible. (For storing Pages, see "STORE" on the next.) This mode is useful when you watch the same Pages everyday.

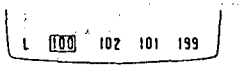
STORE

Press to store the Pages in the "L" mode.

Proceed as follows:

1) First engage the "L" mode.
2) Press PAGE SELECT 1, then key in the Page number you wish to store in position "1". Repeat this step for each position ("1" to "4").
3) Firmly press STORE. (Keep it pressed for more than 1 second.) Four boxes on a bottom line blink once and change to white, then restore to the original colour to indicate that the 4 Pages are memorised.

When calling up the memorised Page, just press the corresponding PAGE SELECT button.



Notes:

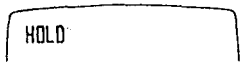
- Channel Positions "0" to "14" are available for memorising Teletext Pages, each with 4 Pages, so that up to 60 Pages can be memorised.
- The one extra memory is available for Channel Positions other than the above (higher than Channel Position "14") and it is used in common. For example; when "P100", "P105", "P110" and "P115" are stored in Channel Position "16", and then if "P101", "P106", "P111" and "P116" are stored in Channel Position "16", the Pages which have been stored in Channel Position "15" will be cancelled automatically.

REVEAL

Some Teletext Pages may contain "questions" with "answers" concealed in the Page. Press REVEAL to display "answers". To conceal them, press REVEAL again.

HOLD

Press HOLD to stop screen scanning of the Teletext display. "HOLD" appears on the top-left of the screen. Then, this Page can no longer be renewed or changed by the station's transmitted signals. To release the HOLD mode, press HOLD again or, press RESET or key in another Page number.



RESET

F mode: Press RESET any time you wish to initialise the Teletext Page to "Page 100".

L mode: Pressing this button returns to one of the memorised Pages.

Notes:

- In the Text mode, it is not possible to adjust the colour, brightness, contrast and detail. (except for the MIX mode).
- The Teletext signals are transmitted together with regular TV broadcast signals. Therefore, if the TV station is not fine-tuned, the Teletext information may have video noise or be distorted.
- After once the Main Power is turned off and on, and the Text mode is engaged, the "F" mode is always engaged initially.
- If a Page is displayed that is not desired, first select another Page (any Page), then select the desired Page again.
- For details of Teletext, consult your local dealer or Teletext broadcast station.

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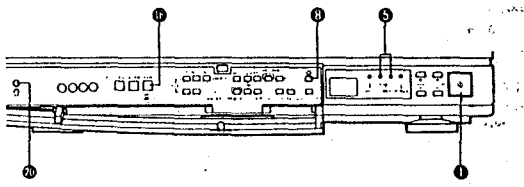
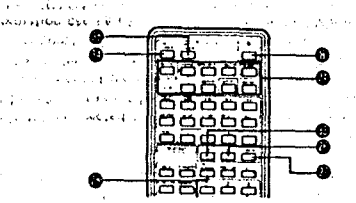
CONVENIENT FUNCTIONS

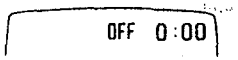




OFF TIMER

The "OFF TIMER" function allows you to turn off your TV set automatically after a preset time of up to 2 hours. Set the OFF TIMER as follows:

1 Press OFF TIMER button ⑧ on the Remote Control. The on-screen display of "OFF 0:00" appears.
- At this time, if the OFF TIMER has been already set, the remaining time before automatic switch-off is displayed.



2 While the "OFF 0:00" is being displayed, each press of the OFF TIMER button advances the time indication in 30-minute increments up to "2:00" (2 hours). Press until the desired setting time appears on the screen. The OFF TIMER activates automatically. "OFF" of TIMER indicators ⑤ remains lit to show that the OFF TIMER is in operation.

0:00→0:30→1:00→1:30→2:00→
(Cancelled)

3 While the OFF TIMER is operating, you can confirm the remaining time. Just press the OFF TIMER button. The remaining time is displayed on the screen.
- At this time, another press of the OFF TIMER button will cancel the time previously set, and allow you to reset the time.

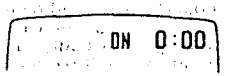
Notes:

- The OFF TIMER does not turn off the main power of the TV set.
- In the case of power failure after the OFF TIMER has been set, when power is reapplied, the TV will switch off automatically after 30 minutes. This also happens when the main power is switched on and off after the OFF TIMER is set. Therefore, in this case, set the setting of the OFF TIMER to 0:00 before switching off the main power so that the TV can be viewed continuously.
- When the remaining time reaches 1 minute, "OFF 0:01" appears on the screen and blinks for a few seconds.
- The on-screen display of OFF TIMER and ON TIMER modes can be in any of three languages: English, German and French. Illustrations on this page show examples with the "English" mode engaged.

ON TIMER

The "ON TIMER" function allows you to turn on your TV set automatically after a preset time of up to 24 hours. Set the ON TIMER as follows:

1 Press ON TIMER ⑨ on the Remote Control. The on-screen display of "ON 0:00" appears.
- At this time, if the ON TIMER has been already set, the remaining time before automatic switch-on is displayed.



2 While the "ON 0:00" is being displayed, pressing the ON TIMER button advances the time indication in 1-hour increments up to "24:00". (24 hours). Keep it pressed until the desired time appears on the screen. The ON TIMER activates automatically. "ON" of TIMER indicators ⑤ remains lit to show that the ON TIMER is in operation.

0:00→1:00→2:00→23:00→24:00→
(Cancelled)

3 While the ON TIMER is operating, with TV powered, you can confirm the remaining time. Just press the ON TIMER button, and the remaining time is displayed on the screen.
- At this time, another press of the ON TIMER button will cancel the time previously set, and allow you to reset the time.

4 Finally, press Power button ⑧ (⏻) on either the Remote Control or front panel to turn the power off.

Notes:

- The ON TIMER is not cancelled even if the power button is pressed to turn the power on and off after the timer setting.
- If the Main Power button ❶ is pressed to turn the main power off, the ON TIMER is cancelled. (It is also cancelled *in the case of power failure.*)
- Once the ON TIMER turns the TV on automatically, if the TV is not operated in any way, after 1 hour the TV will turn off automatically for safety. A single adjustment, even audio level adjustment or channel selection, will cancel this safety switch-off function.

VTR Controls

Your TV set's Remote Control is provided with additional buttons ⑩ for controlling most major functions (POWER, PLAY, REC, STOP, PAUSE/STILL, REW, FWD and CHANNEL (+, -)) of the specific JVC VTRs listed below. Each button's designation corresponds to that of the VTRs'. Refer to the instruction manual of the VTR for details of operation.

Operable JVC VTRs*

HR-D455 [ ]	HR-D157MS [ ]	HR-D370 [ ]
HR-D250 [ ]	HR-D158MS	HR-D470 [ ]
HR-D565 [ ]	HR-D257MS	HR-D755 [ ]
HR-D566 [ ]	HR-D170 [ ]	HR-S5000 [ ]
HR-D725 [ ]	HR-D180 [ ]	

*In addition to the above, all new models of JVC VTRs are operable.
[ ] : Suffix of each model designate specific areas and specifications.

Notes:

- The VTR's RF output switching is also possible. (With some models, this function is not available.)
  Press VIDEO1 ❸ or VIDEO2 ❹ button to output recording playback signals from VTR. Press TV button ❷ to output off-air broadcast signals which are input to VTR's aerial input connector.
- With some models, turning the power on and off is not possible.
- With some models, channel (+, -) switching does not work.
- VTRs of different colour or broadcast systems cannot be used in combination with this TV set.

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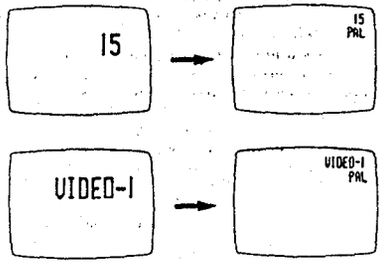
Press ON SCREEN button ● on the Remote Control. The following items will appear on the screen for checking.

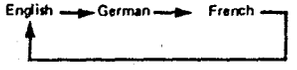
- After a few seconds, the Channel Position number or Real Channel number (with "CH" or "CC"), or VIDEO mode indication ("VIDEO-1" or "VIDEO-2") will shift to the upper right of the screen. At this time, the colour system indication also appears.
  Press ON SCREEN again to clear the display.



Note: The colour system indication does not appear when receiving a black/white broadcast.

LANGUAGE button

The on-screen indications of the picture adjustment/VSM control, sound adjustment, fine-tuning, ON timer and OFF timer can be in any of 3 languages: English, German and French. While the indication appears on the screen, press LANGUAGE button ● . The language mode changes in the order below.



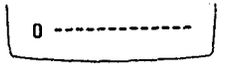
(switched with LANGUAGE button)			Page
English	German	French	
FINE	FEINABST.	FIN	6
COLOUR	FARBE	COULEUR	8
BRIGHT	HELL.	LUMIERE	8
CONT	KONT.	CONT.	8
DETAIL	SCHAERFE	DETAIL	8
ON	EIN	MPM	11
OFF	AUS	APM	11

SKEW button

In the VTR playback, press SKEW button ● on the front panel to correct distorted or skewed portion of the top of the picture, due to degraded video tape.
Normally (for viewing TV or video tape playback), set to ON (—) position. Set to OFF (▲) if pictures are blurred laterally in areas where broadcast signals are weak.

MUTE button (🔇)

Press MUTE button ● to silence the TV sound. Then, the onscreen indication appears. Press again to restore the sound to its previous level.

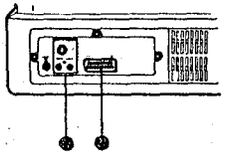


Headphone Jack (∩)

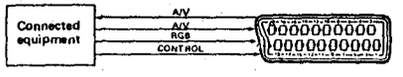
Connect a mini plug of the headphones to this headphone jack ● . When connected, audio output from built-in speakers is switched off automatically.

CONNECTING EXTERNAL EQUIPMENT

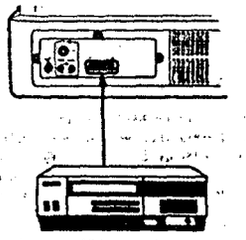
- Prior to making any connections to your TV set, be sure to turn the Main Power off.
- For more detailed understanding of each connection, it is recommended that you read the instruction manual for each component.
- If you operate a video or audio component placed near the TV set, picture and/or sound may become noisy because of interference between components. In such a case, place the components at a sufficient distance from each other.
- This TV set outputs only monaural sound. Therefore, even if stereo sound is input from external components into this TV set, the output sound will be heard only in monaural.
- The following shows examples for connecting external equipment.



- EXT1

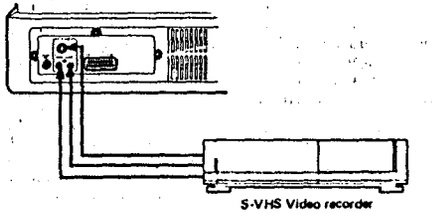


(1) Connect the component as illustrated.
(2) Press TV/VIDEO button ● on the front panel or VIDEO1 button ● on the Remote Control to engage the VIDEO1 mode. "VIDEO-1" is displayed on the screen.
(3) Press either AUTO P/S button ● or SECAM button ● as required.
(4) Engage the Playback mode of the VTR.



[2] Connecting to an S-VHS VTR (for playback)

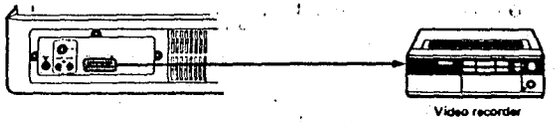
Your TV set is equipped to accept the separated Y (luminance) and C (chrominance) video signals, conforming to the S-VHS (Super VHS) Euro System, ideal for connection of an S-VHS VTR.



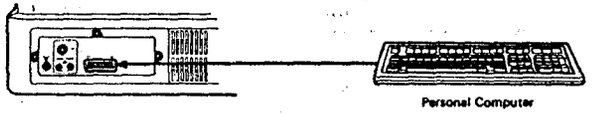
(1) Connect the VTR's S-VIDEO OUT connector (4-pin) to the TV set's S-VIDEO connector (4-pin).
(2) Connect the VTR's AUDIO OUT connectors to the TV set's AUDIO connectors.
(3) Press the VIDEO2 button on the Remote Control or the TV/VIDEO button on the front panel to engage the VIDEO2 mode. ("VIDEO-2" is displayed on the screen)
(4) Press either AUTO P/S button ● or SECAM button ● as required.
(5) Engage the S-VHS VTR's playback mode.

[3] Connecting to a VTR (for recording)

- The video and audio signals of the broadcast being received can be output via the EXT1 connector (TV output). Convenient for recording TV programmes with a tunerless VTR.



[4] Connecting to a component that outputs RGB signals (Personal computers, etc.)

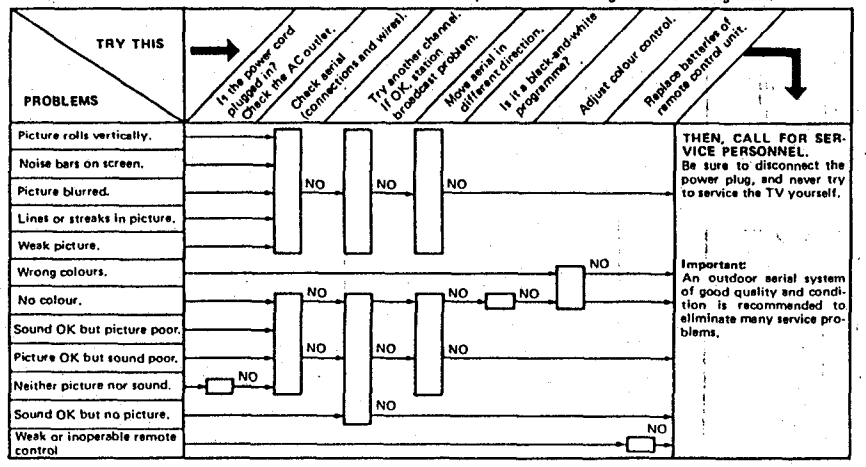


1) Connect the component to the 21-pin EXT1 connector.
2) Turn the component on.

Notes:
- While the connected component is being powered, regular TV broadcasts cannot be viewed in the TV mode. (Except the superimposed pictures from a personal computer provided with the superimposition function.)
- When connecting to a component that outputs RGB signals, information can be viewed on the screen in the TV mode or in the VIDEO1 mode. The VIDEO2 mode cannot be used for viewing information from a connected RGB component.

BEFORE YOU CALL FOR SERVICE

Be sure to review all the instructions written in this booklet. Then try to check according to the following chart.

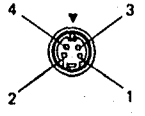

TRY THIS
PROBLEMS
Is the power cord plugged in? Check the AC outlet.
Check aerial (connections and wires).
Try another channel. If OK, station broadcast problem.
Move aerial in different direction.
Is it a black-and-white programme?
Adjust colour control.
Replace batteries of remote control unit.
Picture rolls vertically.
Noise bars on screen.
Picture blurred.
Lines or streaks in picture.
Weak picture.
Wrong colours.
No colour.
Sound OK but picture poor.
Picture OK but sound poor.
Neither picture nor sound.
Sound OK but no picture.
Weak or inoperable remote control
NO
THEN, CALL FOR SERVICE PERSONNEL.
Be sure to disconnect the power plug, and never try to service the TV yourself.
Important:
An outdoor aerial system of good quality and condition is recommended to eliminate many service problems.

SPECIFICATIONS

Type	: Colour TV
Screen size	: 55 cm diagonally measured; FST (Flat-Square Tube)
Reception system	: PAL CCIR B/G; SECAM CCIR B/G
Tuner	: Frequency synthesizer Euro-wide-band tuner (compatible with CATV)
Channel coverage	: VHF/UHF/S-band 112 channels (48 channels can be preset)
Power requirement	: 220 V AC, 50 Hz
Power consumption	: Max. 120 W, Avg. 90 W
External input/output	: 21-pin Euroconnector (SCART) Video: Input/1 Vp-p, 75 ohms Output/1 Vp-p, 75 ohms Audio: Input/500 mV rms, high impedance Output/500 mV rms, low impedance R/G/B: Input/700 mVp-p, 75 ohms Y/C separate video input connector (4-pin) Y: 1.0 Vp-p, 75 ohms C: 0.3 Vp-p (burst level), 75 ohms Audio input connector (RCA) 500 mV rms, high impedance
Audio output	: 5 W (effective output) 7 W (music power)
Speaker	: 10 cm round x 2
Aerial input impedance	: 75 ohms, unbalanced
Teletext system	: Conforms to Teletext systems of West Germany and the United Kingdom system (compatible with FLOF); built-in European CCT (Computer Controlled Teletext) decoder
Dimensions (WxHxD)	: 50.7 x 46.8 x 47.8 cm
Weight	: 23.7 kg
Accessories	: Remote control unit (RM-C707) x 1 R6-size dry cell battery x 2

4-Pin Y/C separate video input connector

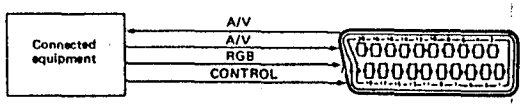
- Pin assignment



Pin No.	Signal
1	GND
2	GND
3	Y (luminance)/1 Vp-p, 75 ohms
4	C (chrominance)/0.3 Vp-p (burst level), 75 ohms

21-Pin Euroconnector (SCART)

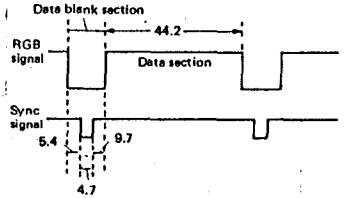
- Pin assignment of the Euroconnector



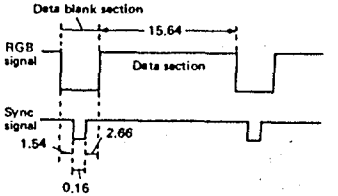
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	AUDIO output	8	Slow SW	15	RED input
2	AUDIO input	9	GREEN GND	16	Blanking (Rapid SW)
3	AUDIO output	10	NC	17	GND (for video output)
4	AUDIO GND	11	GREEN input	18	GND (for video input)
5	BLUE GND	12	NC	19	VIDEO output
6	AUDIO input	13	RED GND	20	VIDEO input
7	BLUE input	14	GND (N.C.)	21	GND

- Recommended timing chart

H.SYNC period (μ sec.)



V.SYNC period (m sec.)



Design and specifications subject to change without notice.

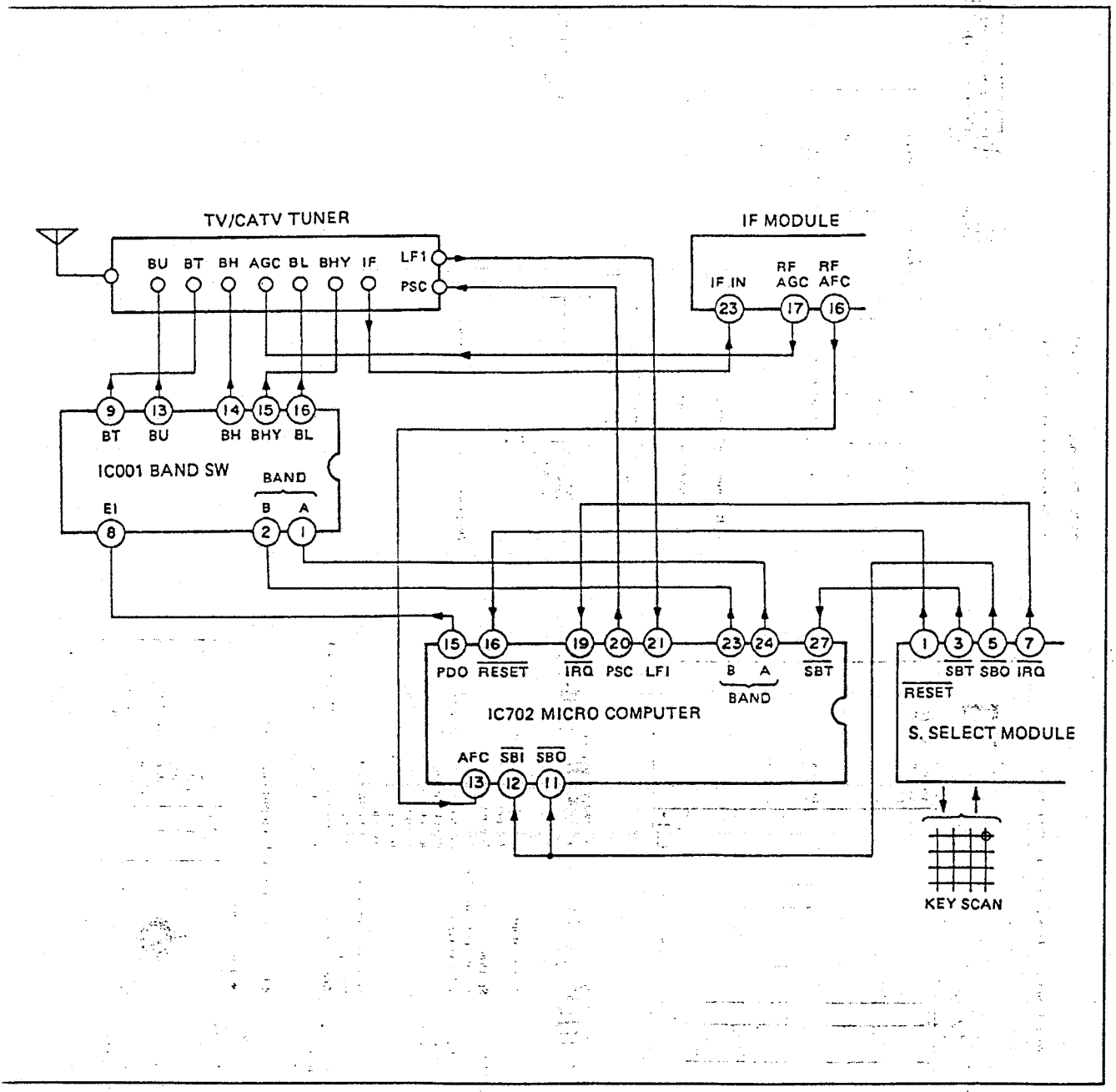
(No.50244) 11

C-S2181ET

TECHNICAL INFORMATION

CIRCUIT ANALYSIS

BLOCK DIAGRAM



OUTLINE OF S. SELECT CIRCUIT
OF FREQUENCY SYNTHESIZER

. 4 bit microcomputer for frequency synthesizer tuner
. 4 bit A/D converter is built in
. Adoption of the Pulse Swallow process (with PLL built in) allows the AFC (Auto Fine tuning Control) function
. Program memory (ROM) ..... 8 bit×2.048 steps
. Data memory (RAM) ..... 4 bit×96 words

The PLL and status control of this equipment comprise the combination of the band switch-over/microcomputer/S. SELECT module circuits and control the S. SELECT circuit, ON SCREEN, volume control, etc.

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Unplug the power supply cord and remove the thirteen screws marked Ⓐ shown in Fig. A.
2. Withdraw the rear cover backward along the rail.

* when reinstalling the rear cover, carefully push it inward after inserting the main (Signal,Power&Def.) P.C board into the rear cover groove.

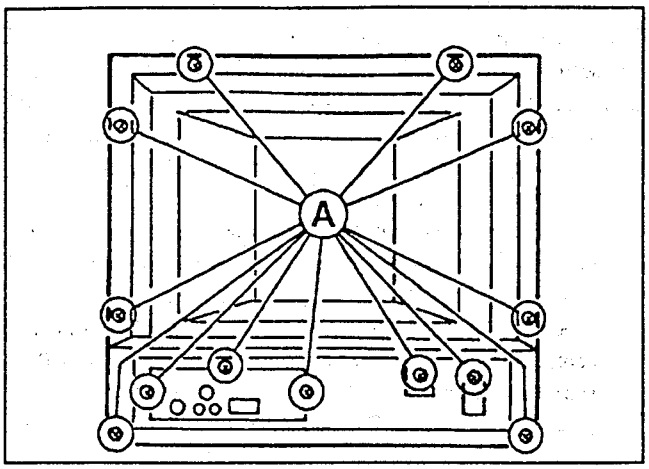


Fig. A

REMOVING THE MAIN P.C BOARD

* After removing the rear cover,

1. Loosen the screw marked Ⓐ shown in Fig. B
2. Remove the wire clamp, connectors and earth wires and so on, (if necessary.).
3. As shown in Fig B, hold the main P.C.board from both sides with both hands and, while raising it upward, remove the main P.C.board by withdrawing it backward.

NOTE

When removing the main P.C.board, withdraw it backward while tilting it toward the left side slightly because the A/V terminal ass'y installed on the main P.C.board hits against the CRT socket P.C.board.The main P.C.board shall be installed by reversing above procedure with due care.

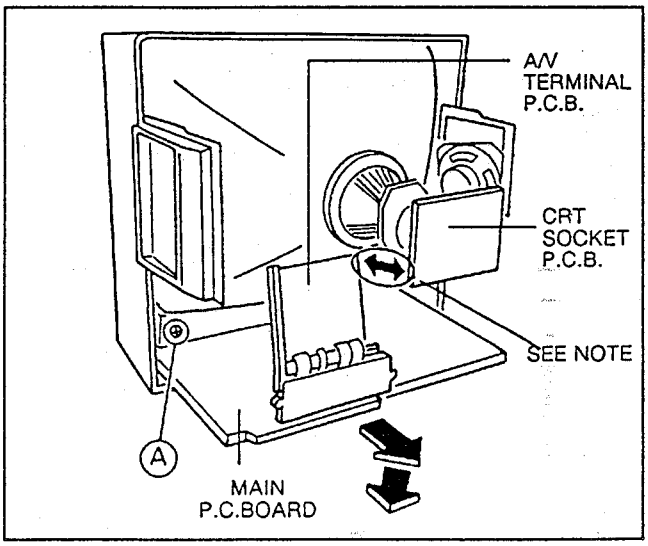


Fig. B

REMOVING THE A/V TERMINAL ASS'Y

* After removing the rear cover,

1. As shown in Fig. C, slide the A/V terminal ass'y in the arrow direction (←①) along the groove and stop it at the place where the groove size is wide.
2. Pulling up the A/V terminal ass'y in the arrow direction (↑②) to remove.

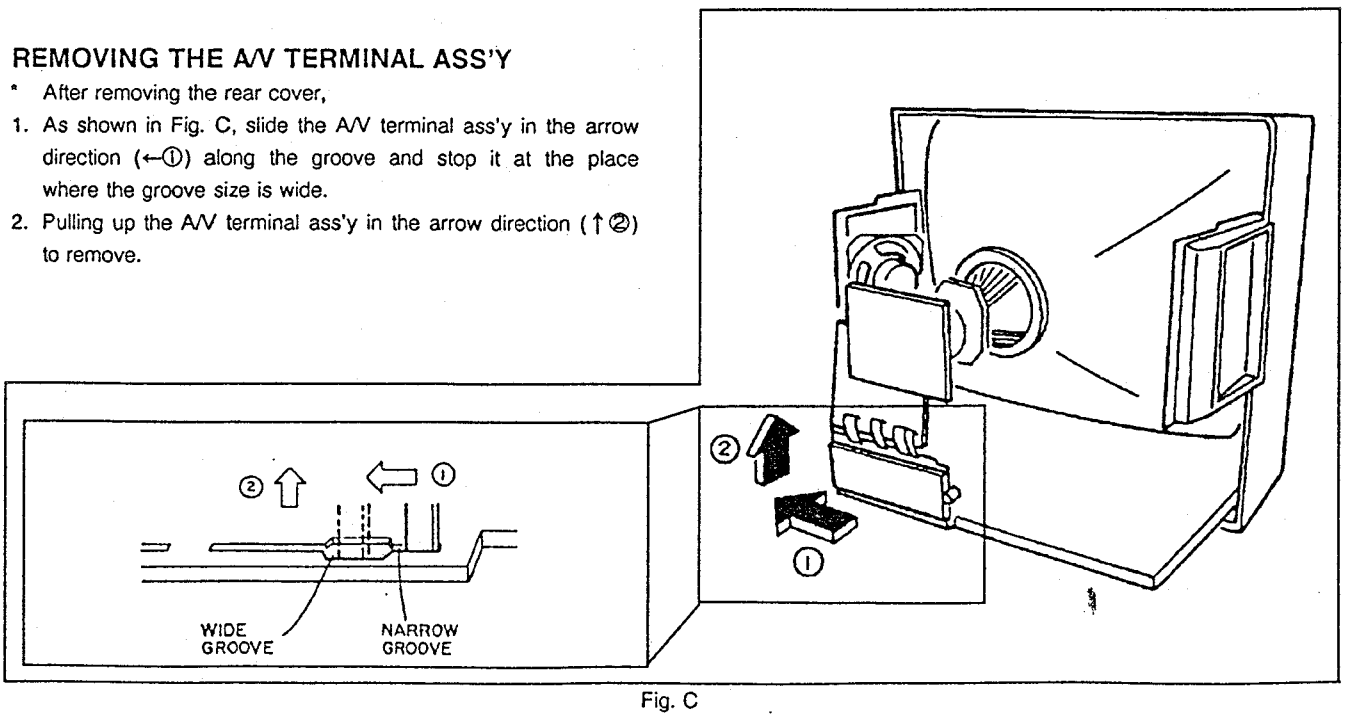


Fig. C

AN EXAMPLE OF PLACEMENT FOR SERVICE

1. As shown in Fig. D, place the unit for service.
2. When the main board, chassis, board, etc, have been removed, the wire clamp, connector, earth wire, etc, which were also detached together must be reattached to their original places in order to make preparations for service.
3. While taking care that there is no short circuit with the conductor section, etc., place the unit. Insulate the unit with a cardbord, or the like, if necessary.
4. After making sure that there is no short circuit and other obstructive matters with the unit, turn on electricity for service.

* When conducting a check with power supplied, be sure to confirm that the CRT earth wire is connected to the CRT socket board and the MAIN board.

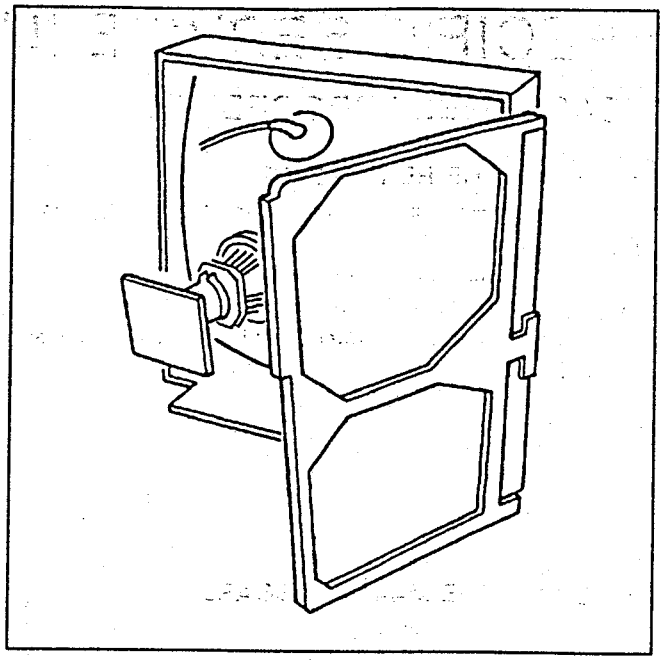


Fig. D

WIRE CLAMPING AND TYING BAND

1. Be sure to clamp the wire.
2. Never remove the tying band used for wire clamping. Should it be inadvertently removed, be sure to clamp the wire again, using insulating material.

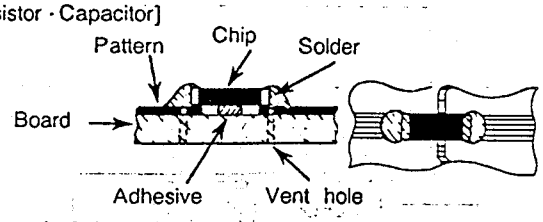
REPLACEMENT OF CHIP COMPONENTS

- **CHIPS ARE NOT USED ON CERTAIN MODELS. REFER TO THE DESCRIPTIONS ON THIS PAGE ONLY WHEN WORKING ON MODELS ON WHICH CHIPS ARE EMPLOYED.**

Replacement of the chip on printed circuit board can be performed easily as follows.

1 **When mounted**

[Resistor · Capacitor]

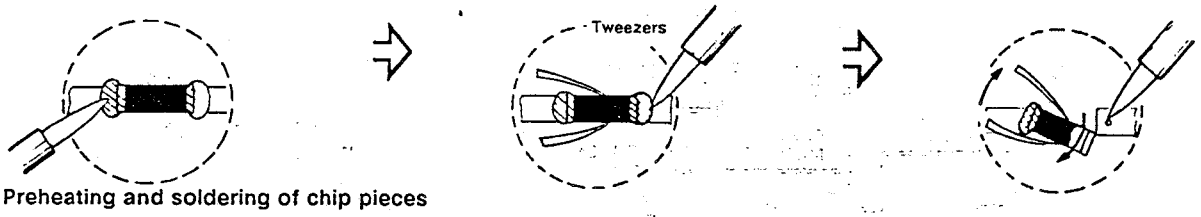


2 **Removal of the chip**

(1) Remove either of the soldered contacts.

(2) Hold the chip with tweezers and remove the other contact.

(3) Work the chip free from the adhesive with tweezers.

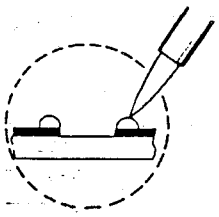


3 **Preheating and soldering of chip pieces**

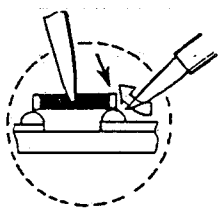
Be sure to preheat chip pieces (except the transistor) especially the capacitor before soldering with hot air, about 150°C (hair dryer or such can be used) for about 2 minutes. Then, immediately solder with an iron of about 30W.

4 **Replacing the chip pieces**

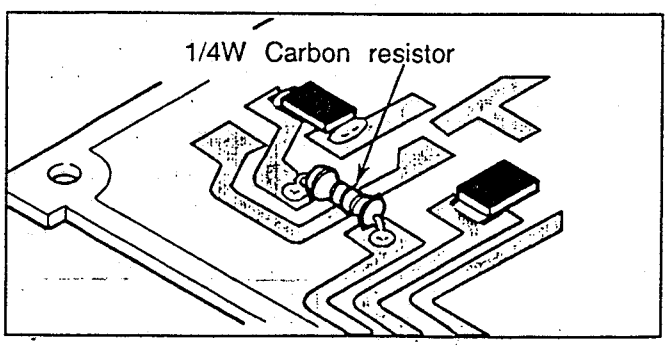
(1) Apply the solder to the board first.



(2) Hold the chip with tweezers and solder it in place, hold the iron at a 45° angle when soldering.

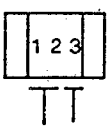


- Discrete parts can be substitutionally mounted as shown in the figure on the right.
  Mounting is also possible by passing the wires from the board front side (parts side) through the chip soldering hole (vent hole of registration part).
  Substitute parts are as follows.
  - Chip Metal Glaze Resistor
    →Carbon Resistor 1/4W ±5%
  - Chip Ceramic Capacitor
    →Ceramic Capacitor 50V ±5%



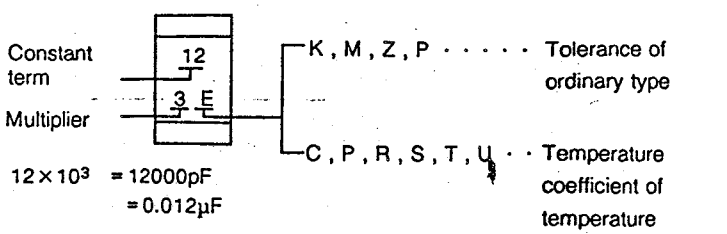
- Decoding of chip parts constant terms

<Chip Metal Glaze Resistor>



Constant term: 12
Multiplier: 3
12×10^3 = 12000Ω
= 12kΩ

<Chip Ceramic Capacitor>


Constant term
12
Multiplier
3 E
K , M , Z , P · · · · · Tolerance of ordinary type
C , P , R , S , T , U · · Temperature coefficient of temperature compensation type

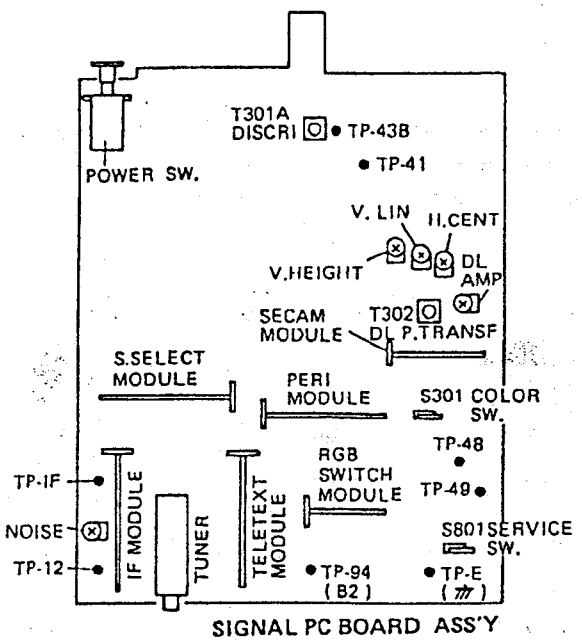
12×10^3 = 12000pF
= 0.012μF

SERVICE ADJUSTMENT

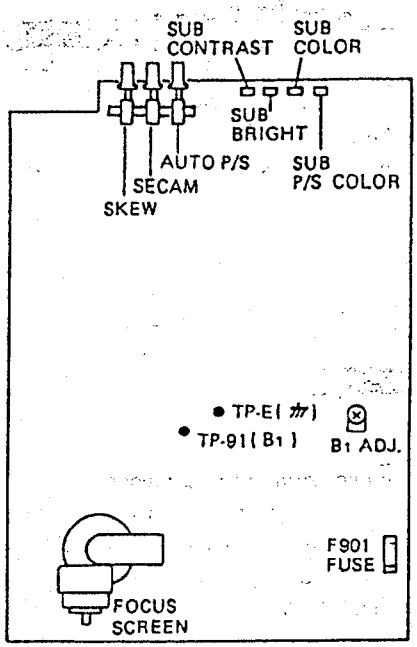
TOOLS AND FIXTURES FOR ADJUSTMENT

- DC VOLTMETER
- OSCILLOSCOPE
- PATTERN GENERATOR (PAL /SECAM)
- PERI TV SIGNAL GENERATOR

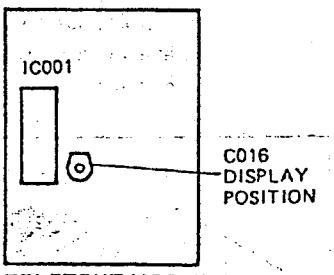
ADJUSTMENT LOCATION



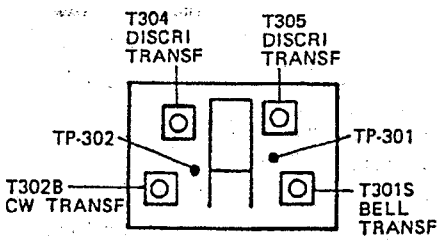
SIGNAL PC BOARD ASS'Y



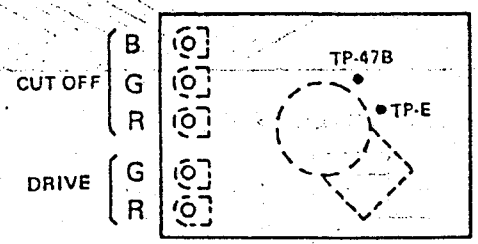
POWER & DEF PC BOARD ASS'Y



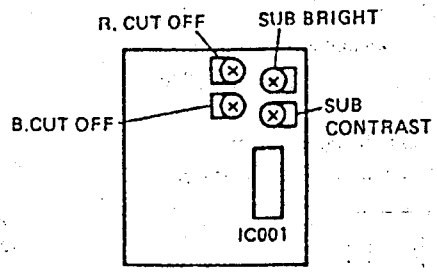
TELETEXT MODULE PC BOARD ASS'Y



SECAM MODULE PC BOARD ASS'Y



CRT SOCKET PC BOARD ASS'Y



PERI MODULE PC BOARD ASS'Y

ADJUSTMENT

POWER & DEF. CIRCUIT

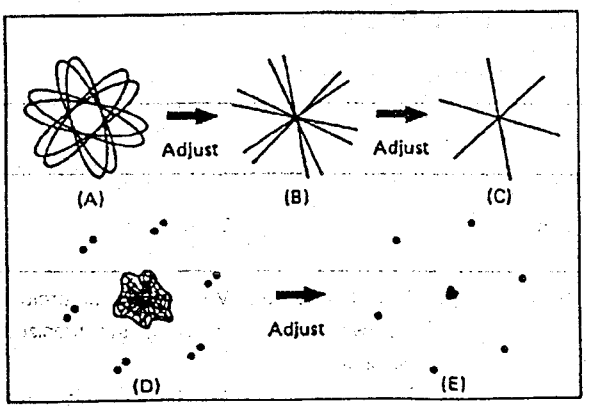
Item	Measuring instrument	Test point	Adjustment part	Description
B1 POWER SUPPLY	DC Voltmerer	TP-91	B1 ADJ. VR	Connect a tester to TP-91 and TP-E (⏚) to check that the voltage is DC 115V. * The tester must have an internal resistance of 20kΩ / V or above.
SUB BRIGHT & SUB CONTRAST			SUB BRIGHT VR & SUB CONTRAST VR	Obtain optimum pictures by adjusting SUB BRIGHT VR & SUB CONTRAST VR. * Avoid excessive brightness.
SUB COLOUR & P/S SUB COLOUR			SUB COLOUR VR & P/S SUB COLOUR VR	1. Receive a SECAM (System SW: SECAM) colour bar signal. 2. Push the standard button and set the video control to the standard position. 3. Adjust the SUB COLOUR VR to obtain natural colour density. 4. Receive a PAL (System SW: P/B AUTO) colour bar signal. 5. Adjust the P/S SUB COLOUR VR to obtain natural colour density.
FOCUS			FOCUS VR	1. Adjust the FOCUS VR to obtain clear pictures. 2. Check that pictures have been adjusted to optimum appearance in both central and peripheral areas of the screen.

SIGNAL CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
NOISE (RF AGC)			NOISE VR	1. Turn the NOISE VR fully counterclockwise (or clockwise) so that noise is synchronized with the pictures. 2. Then slowly turn the NOISE VR clockwise (or counterclockwise) and stop it when noise disappears. 3. Change the channel, and check that no trouble is encountered. * This adjustment should be made when noise is annoying, when such symptoms are detected as stripe-pattern interference in weak field areas, inter modulation noise in strong field areas, and horizontal strethcing of pictures.

SIGNAL CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
V. HEIGHT & V. LIN.	Pattern Generator (PAL)		V. HEIGHT VR & V. LIN. VR	1. Receive a picture that enables vertical symmetry to be checked. 2. Using the V HEIGHT VR reduce the picture vertically. 3. Adjust the vertical symmetry with the V. LIN. VR. 4. Adjust the V. HEIGHT VR so that the picture extends to normal size. • Pictures that enable vertical symmetry to be checked should be circles and crosshatches.
H. CENTRE			H. CENTRE VR	Centring is completed at the factory, although it may become distored when picture tube is changed. In such case, adjusting the H. CENTRE VR moves the picture left or right.
CHROMA CIRCUIT	· Oscilloscope · Pattern Generator (PAL)	TP-48 (Y-axis) TP-49 (X-axis) pin ㉛ of IC201	DL AMP VR DL P TRANSF. DISCRI TRANSF.	· PAL 1. Receive a PAL colour bar signal (system SW: P/S AUTO) and set the oscilloscope at the X-Y mode and then connect CH-1 (X-axis) to TP-49 and CH-2 (Y-axis) to TP-48 respectively. 2. Short the C312 capacitor with a jumper wire and connect pin ㉔ and ㉖ of IC201 with 8.2kΩ resistor. See Lissajous' Fig. (A). 3. Adjust the P/S SUB COLOUR VR so that the figure is not saturated. 4. Adjust the DL AMP VR so that the figure is altered to (B) from (A). 5. Adjust the DL P TRANSF (T302) so that the figure is altered to (C) from (B). 6. Repeat adjustments 4. and 5. more than twice. 7. Remove the shorted jumper wire and 8.2kΩ resistor from pin ㉔ and pin ㉖ of IC201. 8. Reconnect the probe of oscilloscope to pin ㉛ of IC201. 9. Then adjust the DISCRI TRANSF (T301A: Burst cleaning) so that the figure is minimized to (E) from (D).



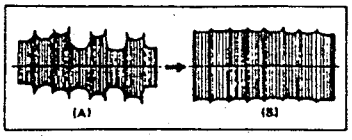
PERI MODULE CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
PERI SUB BRIGHT & PERI SUB CONTRAST	PERI TV-SIGNAL GENERATOR		PERI SUB BRIGHT VR & PERI SUB CONTRAST VR	* While connecting PERI input, 1. Push the standard button on the remote control and set the video control to the standard position. 2. Then align the PERI SUB BRIGHT VR and PERI SUB CONTRAST VR until an ideal picture is obtained.
R. CUTOFF B. CUTOFF	PERI-TV SIGNAL GENERATOR		R. CUTOFF VR & B. CUTOFF VR	While connecting PERI input, adjust the R. CUTOFF VR and B. CUTOFF VR in the PERI circuit until a best white picture is obtained.

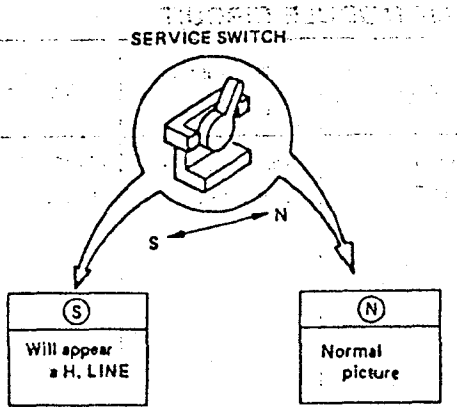
TELETEXT MODULE CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
DISPLAY POSITION			TRIMMER CONDENSER	1. Set to the mix mode (by remote control). 2. Display characters on the screen. 3. Adjust the position of characters so that they will stay around the center of the screen and will not flow(C016).

SECAM MODULE CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
CHROMA CIRCUIT	Oscilloscope DC Voltmeter	TP-301 TP-302	BELL TRANSF. (T301S) CW TRANSF (T302B) DISCRI TRANSF (T304/T305)	· SECAM 1. Receive a SECAM colour bar signal (System SW: SECAM). 2. Connect an oscilloscope to pin ⑮ (or TP-301) of IC301. 3. Adjust the BELL TRANSF (T301S) for flat waveform as altered to figure (B) from (A).  4. Connect a voltmeter to pin ⑫ (or TP-302) of IC301. 5. Adjust CW TRANSF (T302B) for minimum DC voltage. 6. Adjust the DISCRI TRANSF (T304 & T305) until colours are eliminated from the black-and-white (or white) sections of colour bars on the screen.

CRT SOCKET CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
WHIT BALANCE (Black and White Tracking)			R. DRIVE VR G. DRIVE VR R. CUT OFF VR G. CUT OFF VR B. CUT OFF VR SCREEN VR (HVT)	1. Display a monochrome pattern. 2. Set the RED and GREEN DRIVE VRs for their mechanical center. 3. Turn the RED, GREEN and BLUE CUT-OFF VRs and the SCREEN VR fully counterclockwise. 4. Display a horizontal line. (Select the CUT-OFF SERVICE SWITCH from N to S and a HORIZONTAL LINE will appear.) 5. Turn SCREEN VR slowly clockwise until a very faint horizontal line appears. 6. Turn the CUT-OFF VR of the colour which has appeared first, clockwise by about 10° and then adjust the SCREEN VR again so that the colour may shine faintly. 7. Turn the other colour CUT-OFF VRs slowly clockwise until a reasonable white line appears. 8. Return the monochrome pattern. (When returning a monochrome pattern select the CUT-OFF SERVICE SWITCH from S to N and a monochrome pattern will appear.) 9. Adjust the RED and GREEN DRIVE VRs for best white highlights. • HORIZONTAL LINE HOW TO USE THE CUT-OFF SERVICE SWITCH 

PARTS LIST

CAUTION

- The parts marked ⚠ are very important for the safety. When replacing these parts, be sure to use specified ones to secure the safety and performance.
- The module circuit board is supplied together with the assembly, but the parts which do not have the drawing in this Parts List, P. C. Board Ass'y and the Parts No. columns of which are filled with lines —— . will not be supplied.
- As a rule, the resistors and capacitors which are indicated as shown in (NOTE 2) "HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS" are not shown in the list of the parts on the board.
  When ordering the service parts, confirm the resistance/rated power, capacitance/rated voltage, and type of the parts, then order by the part No. indicated according to (NOTE 2).

(NOTE 1) ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% - 10%	+50% - 10%	+80% - 20%	+100% - 0%

(NOTE 2) HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS

■ RESISTOR

Q R □ □ □ □ □ — ○ ○ ○

Kind · Rated Power · Shape · Tolerance · Resistance

Symbol	Part Name
C	COMP.R
D	C R
S	CH MG R

Symbol	Rated Power
01	1 w
12	1/2 w
14	1/4 w
16	1/6 w
18	1/8 w

Symbol	Shape
1	Straight lead
8	Chip

Indicate with first two-figure expressed by Ω and following 0.
please note that,in case of resistance less than 10 Ω, a letter "R"will be effective as point.

EX.

2.2 Ω	=		2R2
470 Ω	= 47×10^{1}	→	471
150kΩ	= 15×10^{4}	→	154

■ CAPACITOR

Q □ □ □ □ □ □ — ○ ○ ○

Kind · Shape · Rated Voltage · Tolerance · Capacitance

Symbol	Part Name
CS	C CAP.
CS	CH C CAP.
ET	E CAP.
FM	M CAP.

5Figure / 6Figure	0	1	2
A		10V	100V
C		16V	160V
D			200V
E		25V	250V
H		50V	500V
J	6.3V	63V	
V		35V	

Indicate with first two-figure expressed by pF and following 0.
Please note that,in case of capacitance less than 10 pF a letter "R" will be effective as point.

EX

5pF	=			5R0
1000pF	=	10×10^{2}	→	102
47μF	=	47×10^{6}	→	476

Symbol	Shape
1	Straight lead
1	Leads in the same direction
8	Chip
A	Leads in the same direction (compact part)

MAIN PARTS LIST

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
CRT & TUNER				
TU1001		BK7362EP-A05	V/U/CATV TUNER	
	⚠	CE41150-002	DEGAUSING COIL	L01
	⚠	A51EAL30X01-J2	PICTURE TUBE/ITC	Include DY. Wedge *
VARIABLE R				
R1107		QVPA603-223A	V. R (NOISE)	22kΩ B
R1338		QVPA601-102A	V. R (DL AMP)	1kΩ B
R1403		QVPA801-203M	V R (H. CENTER)	20kΩ B
R1407		QVPA801-201M	TRIM R (V. HEIGHT)	200 Ω B
R1414		QVPA801-503M	TRIM R (V. LIN)	50kΩ B
R2204		QVPA603-103A	V. R (SUB BRIGHT)	10kΩ B
R2209		QVPA603-103A	V. R (SUB CONT)	10kΩ B
R2302		QVPA603-223A	V R (SUB COLOR)	22kΩ B
R2304		QVPA603-103A	V R (P/S SUB COLO	10kΩ B
R2910		QVPA804-503M	V. R (B1 ADJ)	50kΩ B
R3113		QVPA803-502M	V. R (R CUT OFF)	5kΩ B
R3114		QVPA803-502M	V. R (G CUT OFF)	5kΩ B
R3115		QVPA803-502M	V. R (B CUT OFF)	5kΩ B
R3119		QVPA803-201M	V. R (B DRIVE)	200 Ω B
R3120		QVPA803-201M	V. R (G DRIVE)	200 Ω B
TRANSFORMER				
T2501		CE40203-00A	DRIVE TRANSF.	
T2901	⚠	CE41100-00A	SW TRANSF	
T2902	⚠	CE41059-00B	DRIVE TRANSF.	
	⚠	CE41294-00A-KD	H. V. TRANSF.	T2551
DIODE				
D1001		MA4051 (L) -Y	ZENER DIODE	
D1402		MA4120 (M) -Y	ZENER DIODE	
D1504		MA4075 (H) -Y	ZENER DIODE	
D1506		MA4030 (M) -Y	ZENER DIODE	
D1718		MA4051 (L) -Y	ZENER DIODE	
D1751		GL-9PR26	L. E. D.	MAIN POWER
D1752		GL-9PG26	L. E. D.	ON TIMER
D1753		GL8HS26T	L. E. D.	OFF TIMER
D1754		GL-9PG26	L. E. D.	AFC
D1781		PD49PI	PHOTO DIODE	
D2501		MA4056 (M) -Y	ZENER DIODE	
D2502		MA4051 (M) -Y	ZENER DIODE	
D2581	⚠	MA4068 (L) -Y	ZENER DIODE	
D2583	⚠	MA4075 (M) -T2	ZENER DIODE	
D2584		RD8. 2E (B2)	ZENER DIODE	
D2585		RD8. 2E (B2)	ZENER DIODE	
D2901		LB-156-LFB	DIODE BRIDGE	
D2954		RD20E (B3)	ZENER DIODE	
D2955		RD9. 1E (B)	ZENER DIODE	
TRANSISTOR				
Q2551	⚠	2SD1427	SI. TRANSISTOR	H. OUT
IC				
IC1001		UPC1486C	I. C. (M)	
IC1201		M52016SP	I. C. (M)	
IC1301		AN6558	I. C. (M)	
IC1601		TA7222AP	I. C. (M)	
IC1602		UPC1406HA	I. C. (M)	
IC1701		AN78L05-Y	I. C.	
IC1702		MN15221JMN	I. C. (M)	
IC1781		UPC1373HA (MS)	I. C. (M)	
IC2401		UPC1488H	I. C.	
IC2551		TA78005AP	I. C. (M)	
IC2901	⚠	STR54041S	I. C. (H)	
IC2951		TA78012AP	I. C. (M)	
IC7003		TC4066BP	I. C. (M)	

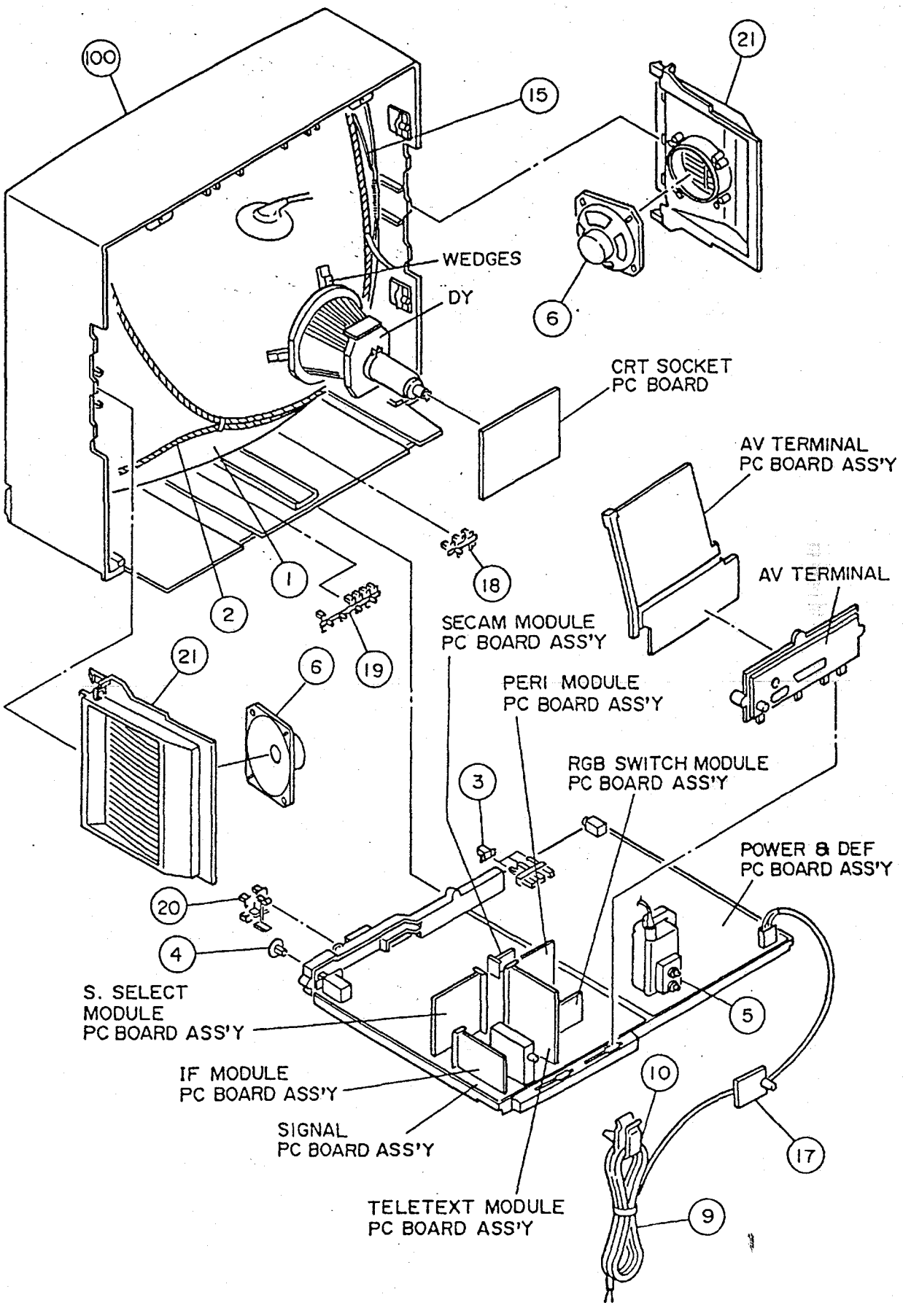
SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
IC				
IC7101		TC4066BP	I. C. (M)	
IC7103		TC4066BP	I. C. (M)	
IC7104		TC4066BP	I. C. (M)	
IC7202		TC4066BP	I. C. (M)	
OTHERS				
		SBY-F004A-MU1	IF MODULE	
		SBY-M007A (U)	S. SELECT MODULE	
		SBY-P005A (U)	PERI MODULE	
		SBY-R002A (U)	RGB SWITCH MODUL	
		CM33501-A0D-V0	AV TERMINAL	
		SBY-S002A (U)	SECAM MODULE	
		SBY-T006A (U)	TELETEXT MODULE	
CP2951	⚠	ICP-N5-Y	IC PROTECTER	
DL1201		CE41639-001	DELAY LINE	
DL1301		CE41489-001	1H DELAY LINE	
DL7101		CE41042-002	DELAY LINE	
F2901	⚠	QMF51E2-3R15S	FUSE	3.15A
J2601		AX49607-004	HEADPHONE JACK	
J7001		CE40529-006	SCART CONNECTOR	
J7003		QMD4A04-001	DIN CONNECTOR	
J7004		CEMN021-001	PIN JACK	
LF2901	⚠	CE40719-00A	LINE FILTER	
LF2902	⚠	CE41213-00A	LINE FILTER	
R2507	⚠	QRZ0054-150M	F R	15 Ω 1/4W J
R2552	⚠	QRH017J-470M	F R	47 Ω 1W J
R2555	⚠	QRH127J-2R2M	F R	2.2 Ω 1/2W J
R2586	⚠	QRH017J-4R7M	F R	4.7 Ω 1W J
R2903	⚠	QRZ0054-100M	F R	10 Ω 1/4W J
R2965	⚠	QRH017J-2R2M	F R	2.2 Ω 1W J
R2971	⚠	QRH017J-101M	F R	100 Ω 1W J
S1301		QSL4A13-C02	LEVER SWITCH	COLOR
S1753		QSP4H11-C04Z	PUSH SWITCH	TV/VIDEO
S1755		QSP4H11-C04Z	PUSH SWITCH	POWER
S1756		QSP4H11-C04Z	PUSH SWITCH	PROGRAM
S1757		QSP4H11-C04Z	PUSH SWITCH	MEMORY
S1758		QSP4H11-C04Z	PUSH SWITCH	F. T△
S1759		QSP4H11-C04Z	PUSH SWITCH	F. T▽
S1760		QSP4H11-C04Z	PUSH SWITCH	CH/CATV
S1761		QSP4H11-C04Z	PUSH SWITCH	POSITION
S1762		QSP4H11-C04Z	PUSH SWITCH	SEARCH
S1763		QSP4H11-C04Z	PUSH SWITCH	AFC
S1765		QSP4H11-C04Z	PUSH SWITCH	LANGUAGE
S1767		QSP4H11-C04Z	PUSH SWITCH	SKIP
S1768		QSP4H11-C04Z	PUSH SWITCH	CH△
S1769		QSP4H11-C04Z	PUSH SWITCH	CH▽
S1770		QSP4H11-C04Z	PUSH SWITCH	VOL△
S1771		QSP4H11-C04Z	PUSH SWITCH	VOL▽
S1801		QSL4A13-C02	LEVER SWITCH	SERVICE
S1901	⚠	QSP4D21-C06	PUSH SWITCH	POWER
S2001		QSP4H11-C04Z	PUSH SWITCH	STANDARD
S2002		QSP4H11-C04Z	PUSH SWITCH	LEVEL△
S2003		QSP4H11-C04Z	PUSH SWITCH	LEVEL▽
S2004		QSP4H11-C04Z	PUSH SWITCH	FUNCTION
S2005		QSP4H11-C04Z	PUSH SWITCH	VSM MEMORY
S2007		QST3321-C03	PUSH SWITCH	SKEW
TH2901	⚠	A76038-T	POSISTOR	or A76038
X1301		CE41115-001	CRYSTAL	
X1501		CSB500F9	CERAMIC RESO	

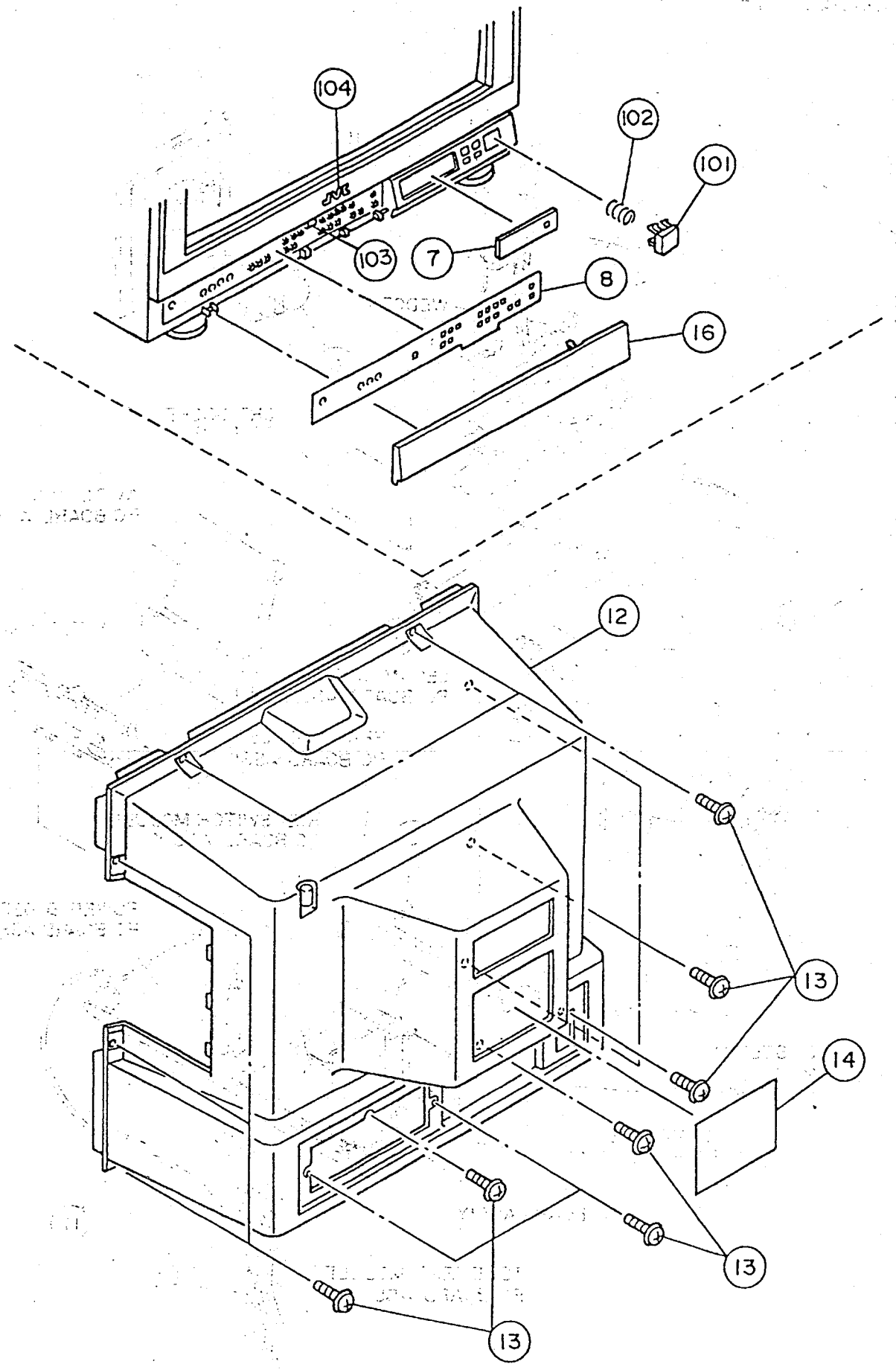
SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
OTHERS				
X1701		CE40842-001	CRYSTAL	
OTHERS				
		CM11672-00A-E	FRONT CABI ASSY	Include No. 101-104*
		CM45724-001-E	POWER KNOB	*
		CM41678-003-E	PUSH KNOB	(×3) *
		CM11522-A02-E	REAR COVER	*
	⚠	QMP4090-200K	POWER CORD	
		CM33485-A01-E	CONTROL KNOB	
		CM32865-004-E	CONTROL KNOB	
		CM45726-B01-E	KNOB	
		EAS-10P433A-KD	CONE SPEAKER	SP01, SP02

EXPLODED VIEW PARTS LIST

SYMBOL NO.	PART NO.	PART NAME	REMARKS	
1	A51EAL30X01-J2	PICTURE TUBE/ITC	Include DY, Wedge	*
2	CE41150-002	DEGAUSING COIL	L01	
3	CM41678-003-E	PUSH KNOB	(×3)	*
4	CM41677-003-E	KNOB CAP		*
5	CE41294-00A-KD	H. V. TRANSF.	T2551	
6	EAS-10P433A-KD	CONE SPEAKER	SP01, SP02	
7	CM32857-006	INDICATOR WINDOW		
8	CM21773-B02	CONTROL SHEET		
9	QMP4090-200K	POWER CORD		
10	CM40024-001	WIRE CLAMP		
12	CM11522-A02-E	REAR COVER		*
13	GBSA4016N	TAP SCREW	(×13)	
14	CM21935-003-E	RATING LABEL		*
15	CH30336-00B	BRAIDED ASSY		
16	CM21772-A03-E	DOOR		*
17	CM21165-001-V0	POWER CORD CLAMP		
18	CM33485-A01-E	CONTROL KNOB		
19	CM32865-004-E	CONTROL KNOB		
20	CM45726-B01-E	KNOB		
21	CM11521-B01-E	SPEAKER GRILL	(×2)	*
100	CM11672-00A-E	FRONT CABI ASSY	Include No. 101-104	*
101	CM45724-001-E	POWER KNOB		*
102	CM30861-065	SPRING		*
103	CM45436-00A	DOOR LATCH		*
104	CM43094-002	JVC MARK		*

EXPLODED VIEW




104
102
101
103
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13

PRINTED CIRCUIT BOARD PARTS LIST

SIGNAL PC BOARD ASS'Y (SBY-1306A(U))

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R			
R1107	QVPA603-223A	V. R (NOISE)	22kΩ B
R1338	QVPA601-102A	V. R (DL AMP)	1kΩ B
R1403	QVPA801-203M	V R (H. CENTER)	20kΩ B
R1407	QVPA801-201M	TRIM R (V. HEIGHT)	200 Ω B
R1414	QVPA801-503M	TRIM R (V. LIN)	50kΩ B
RESISTOR			
R1004	QRG019J-121S	OM R	120 Ω 1W J
R1865	QRG019J-271S	OM R	270 Ω 1W J
CAPACITOR			
C1001	QEM61EK-106MZ	E CAP.	10μF 25V K
C1002	QEC01HM-104MZ	E CAP.	0.1μF 50V M
C1003	QEM61EK-106MZ	E CAP.	10μF 25V K
C1006	QEM61EK-106MZ	E CAP.	10μF 25V K
C1011	QFZ0083-683MZ	M CAP.	0.068μF 50V K
C1012	QFV71HJ-474MZ	TF CAP.	0.47μF 50V J
C1105	QEB61HM-104MZ	E CAP.	0.1μF 50V M
C1205	QEN61HM-474Z	BP E CAP.	0.47μF 50V M
C1214	QEN61HM-335Z	BP E CAP.	3.3μF 50V M
C1309	QFV71HJ-104MZ	TF CAP.	0.1μF 50V J
C1310	QEN61HM-105Z	BP E CAP.	1μF 50V M
C1312	QEN61HM-105Z	BP E CAP.	1μF 50V M
C1401	QFV71HJ-224MZ	TF CAP.	0.22μF 50V J
C1402	QEE61CK-225BZ	TAN. CAP.	2.2μF 16V K
C1405	QEM61HK-475MZ	E CAP.	4.7μF 50V K
C1412	QEM51CM-477M	E CAP.	470μF 16V M
C1414	QFV71HJ-274MZ	TF CAP.	0.27μF 50V J
C1416	QEM61HK-475MZ	E CAP.	4.7μF 50V K
C1505	QFZ0083-563MZ	M CAP.	0.056μF 50V K
C1506	QFV71HJ-104MZ	TF CAP.	0.1μF 50V J
C1607	QFV71HJ-184MZ	TF CAP.	0.18μF 50V J
C1612	QEN61HM-475Z	BP E CAP.	4.7μF 50V M
C1613	QEN61HM-475Z	BP E CAP.	4.7μF 50V M
C1781	QFV71HJ-333MZ	TF CAP.	0.033μF 50V J
C1782	QEKC1CM-106GMZ	E CAP.	10μF 16V M
C1783	QEKC1VM-475GMZ	E CAP.	4.7μF 35V M
C1784	QEKC1CM-106GMZ	E CAP.	10μF 16V M
C1785	QEKC1CM-336MZ	E CAP.	33μF 16V M
C1820	QEN61HM-105Z	BP E CAP.	1μF 50V M
C1821	QEN61HM-105Z	BP E CAP.	1μF 50V M
C1822	QEN61HM-105Z	BP E CAP.	1μF 50V M
TRANSFORMER			
T1301A	CE40359	IDENT TRANSF	
T1302	CE40396-A01	DL P TRANSF	
T1781	CELT010-001	BP TRANSF.	
COIL			
L1001	CELP006-5R6Z	PEAKING COIL	5.6μH
L1002	CELP006-5R6Z	PEAKING COIL	5.6μH
L1003	CELP006-5R6Z	PEAKING COIL	5.6μH
L1004	CELP006-120Z	PEAKING COIL	12μH
L1101	CELP006-8R2Z	PEAKING COIL	8.2μH
L1201	CELP006-180Z	PEAKING COIL	18μH
L1203	CE40041-390	PEAKING COIL	39μH
L1301	CELP006-120Z	PEAKING COIL	12μH
L1303	CELP006-8R2Z	PEAKING COIL	8.2μH
L1801	A76186-68Z	PEAKING COIL	68μH

SYMBOL NO.	PART NO.	PART NAME	REMARKS
DIODE			
D1001	MA4051 (L) -Y	ZENER DIODE	
D1201	1SS133-Y	SI. DIODE	
D1205	1SS133-Y	SI. DIODE	
D1301	1SS133-Y	SI. DIODE	
D1306	1SS133-Y	SI. DIODE	
D1307	1SS133-Y	SI. DIODE	
D1308	1SS133-Y	SI. DIODE	
D1309	1SS133-Y	SI. DIODE	
D1310	1SS133-Y	SI. DIODE	
D1402	MA4120 (M) -Y	ZENER DIODE	
D1403	1SS133-Y	SI. DIODE	
D1502	1SS133-Y	SI. DIODE	
D1503	1SS133-Y	SI. DIODE	
D1504	MA4075 (H) -Y	ZENER DIODE	
D1505	1SS133-Y	SI. DIODE	
D1506	MA4030 (M) -Y	ZENER DIODE	
D1507	1SS133-Y	SI. DIODE	
D1508	1SS133-Y	SI. DIODE	
D1509	1SS133-Y	SI. DIODE	
D1601	1SS133-Y	SI. DIODE	
D1701	1SS133-Y	SI. DIODE	
D1702	1SS133-Y	SI. DIODE	
D1704	1SS133-Y	SI. DIODE	
D1705	1SS133-Y	SI. DIODE	
D1706	1SS133-Y	SI. DIODE	
D1707	1SS133-Y	SI. DIODE	
D1711	1SS133-Y	SI. DIODE	
D1718	MA4051 (L) -Y	ZENER DIODE	
D1719	1SS133-Y	SI. DIODE	
D1751	GL-9PR26	L. E. D.	MAIN POWER
D1752	GL-9PG26	L. E. D.	ON TIMER
D1753	GL8HS26T	L. E. D.	OFF TIMER
D1754	GL-9PG26	L. E. D.	AFC
D1781	PD49PI	PHOTO DIODE	
D1801	W06A-4	SI. DIODE	
D1804	1SS133-Y	SI. DIODE	
D1806	1SS133-Y	SI. DIODE	
D1807	1SS133-Y	SI. DIODE	
D1808	1SS133-Y	SI. DIODE	
TRANSISTOR			
Q1201	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1203	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1206	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1301	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1302	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1303	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1305	2SC1815 (BL) -Y	TRANSISTOR	
Q1306	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1501	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1502	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1503	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1504	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1505	2SK301 (P) -Y	F E T	
Q1506	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1507	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1601	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1602	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1701	2SC1815 (Y, GR) Y	SI. TRANSISTOR	

SYMBOL NO.	PART NO.	PART NAME	REMARKS
TRANSISTOR			
Q1702	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1705	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1706	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1801	2SA673 (C) -Y	TRANSISTOR	
Q1802	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1803	2SC1815 (Y) -Y	SI. TRANSISTOR	
Q1804	2SC1815 (Y) -Y	SI. TRANSISTOR	
Q1805	2SC1815 (Y) -Y	SI. TRANSISTOR	
Q1807	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1808	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1809	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1810	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1811	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1812	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1813	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1814	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1815	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1816	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
IC			
IC1001	UPC1486C	I. C. (M)	
IC1201	M52016SP	I. C. (M)	
IC1301	AN6558	I. C. (M)	
IC1601	TA7222AP	I. C. (M)	
IC1602	UPC1406HA	I. C. (M)	
IC1701	AN78L05-Y	I. C.	
IC1702	MN15221JMN	I. C. (M)	
IC1781	UPC1373HA (MS)	I. C. (M)	
OTHERS			
	SBY-F004A-MU1	IF MODULE	
	SBY-M007A (U)	S. SELECT MODULE	
	SBY-P005A (U)	PERI MODULE	
	SBY-R002A (U)	RGB SWITCH MODUL	
	SBY-S002A (U)	SECAM MODULE	
	SBY-T006A (U)	TELETEXT MODULE	
DL1201	CE41639-001	DELAY LINE	
DL1301	CE41489-001	1H DELAY LINE	
S1301	QSL4A13-C02	LEVER SWITCH	COLOR
S1753	QSP4H11-C04Z	PUSH SWITCH	TV/VIDEO
S1755	QSP4H11-C04Z	PUSH SWITCH	POWER
S1756	QSP4H11-C04Z	PUSH SWITCH	PROGRAM
S1757	QSP4H11-C04Z	PUSH SWITCH	MEMORY
S1758	QSP4H11-C04Z	PUSH SWITCH	F. T△
S1759	QSP4H11-C04Z	PUSH SWITCH	F. T▽
S1760	QSP4H11-C04Z	PUSH SWITCH	CH/CATV
S1761	QSP4H11-C04Z	PUSH SWITCH	POSITION
S1762	QSP4H11-C04Z	PUSH SWITCH	SEARCH
S1763	QSP4H11-C04Z	PUSH SWITCH	AFC
S1765	QSP4H11-C04Z	PUSH SWITCH	LANGUAGE
S1767	QSP4H11-C04Z	PUSH SWITCH	SKIP
S1768	QSP4H11-C04Z	PUSH SWITCH	CH△
S1769	QSP4H11-C04Z	PUSH SWITCH	CH▽
S1770	QSP4H11-C04Z	PUSH SWITCH	VOL△
S1771	QSP4H11-C04Z	PUSH SWITCH	VOL▽
S1801	QSL4A13-C02	LEVER SWITCH	SERVICE
⚠ S1901	QSP4D21-C06	PUSH SWITCH	POWER
TU1001	BK7362EP-A05	V/U/CATV TUNER	TU1001
X1301	CE41115-001	CRYSTAL	
X1501	CSB500F9	CERAMIC RESO	
X1701	CE40842-001	CRYSTAL	

POWER & DEF. PC BOARD ASS'Y (SBY-2306A(U))

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R			
R2204	QVPA603-103A	V. R (SUB BRIGHT)	10kΩ B
R2209	QVPA603-103A	V. R (SUB CONT)	10kΩ B
R2302	QVPA603-223A	V R (SUB COLOR)	22kΩ B
R2304	QVPA603-103A	V R (P/S SUB COLO	10kΩ B
R2910	QVPA804-503M	V. R (B1 ADJ)	50kΩ B
RESISTOR			
R2504	QRG029J-121A	OM R	120 Ω 2W J
R2505	QRG029J-151A	OM R	150 Ω 2W J
R2506	QRG029J-820A	OM R	82 Ω 2W J
R2551	QRG019J-471S	OM R	470 Ω 1W J
R2553	QRX039J-1R8	MF R	1.8 Ω 3W J
R2554	QRX039J-2R2A	MF R	2.2 Ω 3W J
R2564	QRG029J-680	OM R	68 Ω 2W J
R2583	QRV141F-7681AY	MF R	7.68kΩ 1/4W F
R2584	QRV141F-2491AY	MF R	2.49kΩ 1/4W F
R2588	QRD161J-683Y	C R	68kΩ 1/6W J
R2589	QRD161J-223Y	C R	22kΩ 1/6W J
R2590	QRD161J-101Y	C R	100 Ω 1/6W J
R2591	QRD161J-683Y	C R	68kΩ 1/6W J
R2592	QRD143J-6R8SX	C R	6.8 Ω 1/4W J
R2901	QRF204K-5R6	UNF R	5.6 Ω 20W K
R2902	QRG029J-823A	OM R	82kΩ 2W J
R2907	QRG019J-221S	OM R	220 Ω 1W J
R2908	QRG029J-473A	OM R	47kΩ 2W J
R2909	QRG029J-150	OM R	15 Ω 2W J
R2913	QRM055K-R22	MP R	0.22 Ω 5W K
R2914	QRX019J-3R9S	MF R	3.9 Ω 1W J
R2951	QRG029J-333A	OM R	33kΩ 2W J
R2952	QRG029J-333A	OM R	33kΩ 2W J
R2955	QRG029J-472A	OM R	4.7kΩ 2W J
R2956	QRG029J-682A	OM R	6.8kΩ 2W J
R2957	QRG019J-273S	OM R	27kΩ 1W J
R2960	QRG029J-101A	OM R	100 Ω 2W J
R2969	QRX029J-1R8A	MF R	1.8 Ω 2W J
R2970	QRG029J-391A	OM R	390 Ω 2W J
R2981	QRZ0057-825	C R	8.2MΩ 1W J
CAPACITOR			
C2403	QFV71HJ-394MZ	TF CAP.	0.39μF 50V J
C2406	QFV71HJ-393MZ	TF CAP.	0.039μF 50V J
C2504	QEM51CM-477M	E CAP.	470μF 16V M
C2551	QFZ0081-8301S	MPP CAP.	8300pF 1600V ±3%
C2552	QFZ0089-354S	MPP CAP.	0.35μF 200V J
C2553	QFV71HJ-104MZ	TF CAP.	0.1μF 50V J
C2559	QEHC1EM-108MZ	E CAP.	1000μF 25V M
C2565	QEHC1AM-108MZ	E CAP.	1000μF 10V M
C2584	QETC0JM-477Z	E CAP.	470μF 6.3V M
C2902	QFZ9022-473M	MF CAP.	0.047μFAC250V M
C2903	QFZ9022-473M	MF CAP.	0.047μFAC250V M
C2904	QFZ9022-473M	MF CAP.	0.047μFAC250V M
C2905	QCZ9036-471M	C CAP.	470pFAC400V K
C2906	QCZ9034-472A	C CAP.	4700pFAC400V P
C2907	QCZ9034-472A	C CAP.	4700pFAC400V P
C2908	QCZ9034-472A	C CAP.	4700pFAC400V P
C2911	QEZ0084-227R	E CAP.	220μF 400V M
C2913	QEHC2AM-106MZ	E CAP.	10μF 100V M
C2915	QFV71HJ-474MZ	TF CAP.	0.47μF 50V J
C2917	QCZ0122-821U	C CAP.	820pF 2000V K
C2921	QCZ0122-391U	C CAP.	390pF 2000V K
C2923	QFV71HJ-474MZ	TF CAP.	0.47μF 50V J

	SYMBOL NO.	PART NO.	PART NAME	REMARKS
	CAPACITOR			
	C2951	QCZ0122-152A	C CAP.	1500pF 2000V K
	C2952	QEH52CM-107M	E CAP.	100μF 160V M
⚠	C2981	QCZ9036-102M	C CAP.	1000pFAC400V M
⚠	C2982	QCZ9036-471M	C CAP.	470pFAC400V K
	TRANSFORMER			
	T2501	CE40203-00A	DRIVE TRANSF.	
⚠	T2901	CE41100-00A	SW TRANSF	
⚠	T2902	CE41059-00B	DRIVE TRANSF.	
	COIL			
	L2551	CE40669-00A	LINIARITY COIL	
	L2552	CJ30030-050	HEATER CHOKE	
	L2553	CELP002-272Z	PEAKING COIL	2700μH
	DIODE			
	D2001	1SS133-Y	SI. DIODE	
	D2002	1SS133-Y	SI. DIODE	
	D2402	EU2A-T3	SI. DIODE	
	D2403	1SR35-100-Z	SI. DIODE	
	D2501	MA4056 (M) -Y	ZENER DIODE	
	D2502	MA4051 (M) -Y	ZENER DIODE	
	D2503	1SS133-Y	SI. DIODE	
	D2504	1SS146-Y	SI. DIODE	
	D2505	1SS146-Y	SI. DIODE	
	D2551	DFA1A4-Z	SI. DIODE	
	D2552	U19E-FK	SI. DIODE	
	D2553	RH1S-Z	SI. DIODE	
	D2554	1SS133-Y	SI. DIODE	
	D2555	1SS82-T1	SI. DIODE	
	D2556	1SS133-Y	SI. DIODE	
⚠	D2581	MA4068 (L) -Y	ZENER DIODE	
	D2582	1SR35-100-Z	SI. DIODE	
⚠	D2583	MA4075 (M) -T2	ZENER DIODE	
	D2584	RD8.2E (B2)	ZENER DIODE	
	D2585	RD8.2E (B2)	ZENER DIODE	
⚠	D2586	1SS133-Y	SI. DIODE	
	D2587	1SS133	SI. DIODE	
	D2901	LB-156-LFB	DIODE BRIDGE	
	D2902	EU2A-Z	SI. DIODE	
	D2903	W06-B-Z	SI. DIODE	
	D2904	RU1C-LFA1	SI. DIODE	
	D2905	EU2A-Z	SI. DIODE	
	D2951	RU4B-LFK2	SI. DIODE	
	D2952	DFA1A4-Z	SI. DIODE	
	D2953	EU2A-Z	SI. DIODE	
	D2954	RD20E (B3)	ZENER DIODE	
	D2955	RD9.1E (B)	ZENER DIODE	
	D2956	EU2A	SI. DIODE	
	D2957	1SS133-Y	SI. DIODE	
	D2958	EU2A-Z	SI. DIODE	
	D2959	1SS133	SI. DIODE	
	D2960	1SS133	SI. DIODE	
	D2961	1SS133	SI. DIODE	
	D2962	1SS133	SI. DIODE	
	TRANSISTOR			
	Q2501	2SC1627A-Y	SI. TRANSISTOR	
⚠	Q2551	2SD1427	SI. TRANSISTOR	H. OUT
	Q2552	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
⚠	Q2581	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
⚠	Q2582	2SC1815 (Y, GR) Y	SI. TRANSISTOR	

SYMBOL NO.	PART NO.	PART NAME	REMARKS
TRANSISTOR			
Q2583	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2901	2SC2655 (Y) -Y	SI. TRANSISTOR	
Q2902	2SA966-Y	SI. TRANSISTOR	
Q2951	2SD1274AV	SI. TRANSISTOR	
Q2952	2SA1013 (O) -Y	TRANSISTOR	
Q2953	2SC2229 (Y) -Y	SI. TRANSISTOR	
Q2954	2SA966-Y	SI. TRANSISTOR	
Q2955	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2956	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q2957	2SC2655 (Y) -Y	SI. TRANSISTOR	
IC			
IC2401	UPC1488H	I. C.	
IC2551	TA78005AP	I. C. (M)	
IC2901	STR54041S	I. C. (H)	
IC2951	TA78012AP	I. C. (M)	
OTHERS			
CP2951	ICP-N5-Y	IC PROTECTER	
F2901	QMF51E2-3R15S	FUSE	3.15A
J2601	AX49607-004	HEADPHONE JACK	
LF2901	CE40719-00A	LINE FILTER	
LF2902	CE41213-00A	LINE FILTER	
R2507	QRZ0054-150M	F R	15 Ω 1/4W J
R2552	QRH017J-470M	F R	47 Ω 1W J
R2555	QRH127J-2R2M	F R	2.2 Ω 1/2W J
R2586	QRH017J-4R7M	F R	4.7 Ω 1W J
R2903	QRZ0054-100M	F R	10 Ω 1/4W J
R2965	QRH017J-2R2M	F R	2.2 Ω 1W J
R2971	QRH017J-101M	F R	100 Ω 1W J
S2001	QSP4H11-C04Z	PUSH SWITCH	STANDARD
S2002	QSP4H11-C04Z	PUSH SWITCH	LEVEL△
S2003	QSP4H11-C04Z	PUSH SWITCH	LEVEL▽
S2004	QSP4H11-C04Z	PUSH SWITCH	FUNCTION
S2005	QSP4H11-C04Z	PUSH SWITCH	VSM MEMORY
S2007	QST3321-C03	PUSH SWITCH	SKEW
TH2901	A76038-T	POSISTOR	or A76038

CRT SOCKET PC BOARD ASS'Y (SBY-3056A(U))

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R			
R3113	QVPA803-502M	V. R (R CUT OFF)	5kΩ B
R3114	QVPA803-502M	V. R (G CUT OFF)	5kΩ B
R3115	QVPA803-502M	V. R (B CUT OFF)	5kΩ B
R3119	QVPA803-201M	V. R (B DRIVE)	200 Ω B
R3120	QVPA803-201M	V. R (G DRIVE)	200 Ω B
RESISTOR			
R3104	QRG029J-153A	OM R	15kΩ 2W J
R3105	QRG029J-153A	OM R	15kΩ 2W J
R3106	QRG029J-153A	OM R	15kΩ 2W J
R3107	QRG029J-183A	OM R	18kΩ 2W J
R3108	QRG029J-183A	OM R	18kΩ 2W J
R3109	QRG029J-183A	OM R	18kΩ 2W J
R3125	QRZ0056-332Z	COMP R	3.3kΩ 1/2W K
R3126	QRZ0056-332Z	COMP R	3.3kΩ 1/2W K
R3127	QRZ0056-332Z	COMP R	3.3kΩ 1/2W K
R3128	QRZ0056-332Z	COMP R	3.3kΩ 1/2W K
R3129	QRZ0056-332Z	COMP R	3.3kΩ 1/2W K
R3130	QRZ0056-332Z	COMP R	3.3kΩ 1/2W K
CAPACITOR			
C3161	QFH53BK-223M	MM CAP.	0.022μF 1250V K
COIL			
L3101	QQL043K-101	PEAKING COIL	100μH
L3102	QQL043K-101	PEAKING COIL	100μH
L3103	QQL043K-101	PEAKING COIL	100μH
L3104	A76186-47Z	PEAKING COIL	47μH
L3105	A76186-47Z	PEAKING COIL	47μH
L3106	A76186-47Z	PEAKING COIL	47μH
DIODE			
D3101	1SS133-Y	SI. DIODE	
D3102	1SS133-Y	SI. DIODE	
D3103	1SS133-Y	SI. DIODE	
D3104	1SS133-Y	SI. DIODE	
D3105	1SS133-Y	SI. DIODE	
TRANSISTOR			
Q3101	2SC1360	SI. TRANSISTOR	
Q3102	2SC1360	SI. TRANSISTOR	
Q3103	2SC1360	SI. TRANSISTOR	
Q3104	2SC2068-LB	SI. TRANSISTOR	
Q3105	2SC2068-LB	SI. TRANSISTOR	
Q3106	2SC2068-LB	SI. TRANSISTOR	
Q3151	2SC1360	SI. TRANSISTOR	
Q3152	2SC1360	SI. TRANSISTOR	
Q3153	2SC1360	SI. TRANSISTOR	
OTHERS			
⚠	A75522-C	CRT SOCKET	

N TERMINAL PC BOARD ASS'Y (SBY-7004A(U))

SYMBOL NO.	PART NO.	PART NAME	REMARKS
CAPACITOR			
C7001	QEKC1HM-105GMZ	E CAP.	1μF 50V M
C7003	QEKC1HM-105GMZ	E CAP.	1μF 50V M
C7005	QEN61HM-105Z	BP E CAP.	1μF 50V M
C7006	QEN61HM-105Z	BP E CAP.	1μF 50V M
C7008	QEKC1HM-105GMZ	E CAP.	1μF 50V M
C7009	QEN61HM-105Z	BP E CAP.	1μF 50V M
C7011	QEKC1CM-336MZ	E CAP.	33μF 16V M
C7013	QEKC1CM-107MZ	E CAP.	100μF 16V M
C7104	QEKC1CM-336MZ	E CAP.	33μF 16V M
C7107	QEN61CM-336Z	BP E CAP.	33μF 16V M
C7110	QEKC1CM-476MZ	E CAP.	47μF 16V M
C7111	QEKC1CM-476MZ	E CAP.	47μF 16V M
C7117	QEKC1CM-107MZ	E CAP.	100μF 16V M
C7201	QEKC1VM-475GMZ	E CAP.	4.7μF 35V M
C7205	QEKC1VM-475GMZ	E CAP.	4.7μF 35V M
C7209	QEKC1CM-106GMZ	E CAP.	10μF 16V M
C7211	QEKC1HM-105GMZ	E CAP.	1μF 50V M
COIL			
L7101	A76186-220Z	PEAKING COIL	220μH
DIODE			
D7001	RD13JS-Y	SI DIODE	
D7002	RD13JS-Y	SI DIODE	
D7004	RD13JS-Y	SI DIODE	
D7006	RD13JS-Y	SI DIODE	
D7008	RD13JS-Y	SI DIODE	
D7009	RD13JS-Y	SI DIODE	
D7011	RD13JS-Y	SI DIODE	
D7016	RD13JS-Y	SI DIODE	
D7017	1SS133-Y	SI. DIODE	
D7025	1SS133-Y	SI. DIODE	
D7111	RD13JS-Y	SI DIODE	
D7112	RD13JS-Y	SI DIODE	
TRANSISTOR			
Q7001	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7002	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7003	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7005	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7006	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7007	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7008	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7103	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7104	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7107	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7109	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7110	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7111	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7112	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7113	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7205	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
IC			
IC7003	TC4066BP	I. C. (M)	
IC7101	TC4066BP	I. C. (M)	
IC7103	TC4066BP	I. C. (M)	
IC7104	TC4066BP	I. C. (M)	
IC7202	TC4066BP	I. C. (M)	
DL7101	CE41042-002	DELAY LINE	
J7001	CE40529-006	SCART CONNECTOR	
J7003	QMD4A04-001	DIN CONNECTOR	
J7004	CEMN021-001	PIN JACK	

MODULE P.C BOARD PARTS LIST

The following module pc boards are supplied as assemblies.
The component parts on the module PC boards are available only when the parts are listed in the "MODULE PRINTED CIRCUIT BOARD PARTS LIST."

IF MODULE PC BOARD Ass'y (SBY-F004A-MU1) within SIGNAL PC BOARD Ass'y

S.SELECT MODULE PC BOARD Ass'y (SBY-M007A(U)) within SIGNAL PC BOARD Ass'y

RGB SWITCH MODULE PC BOARD Ass'y (SBY-R002A(U)) within SIGNAL PC BOARD Ass'y

SECAM MODULE PC BOARD ASS'Y (SBY-S002A(U)) within SIGNAL PC BOARD Ass'y

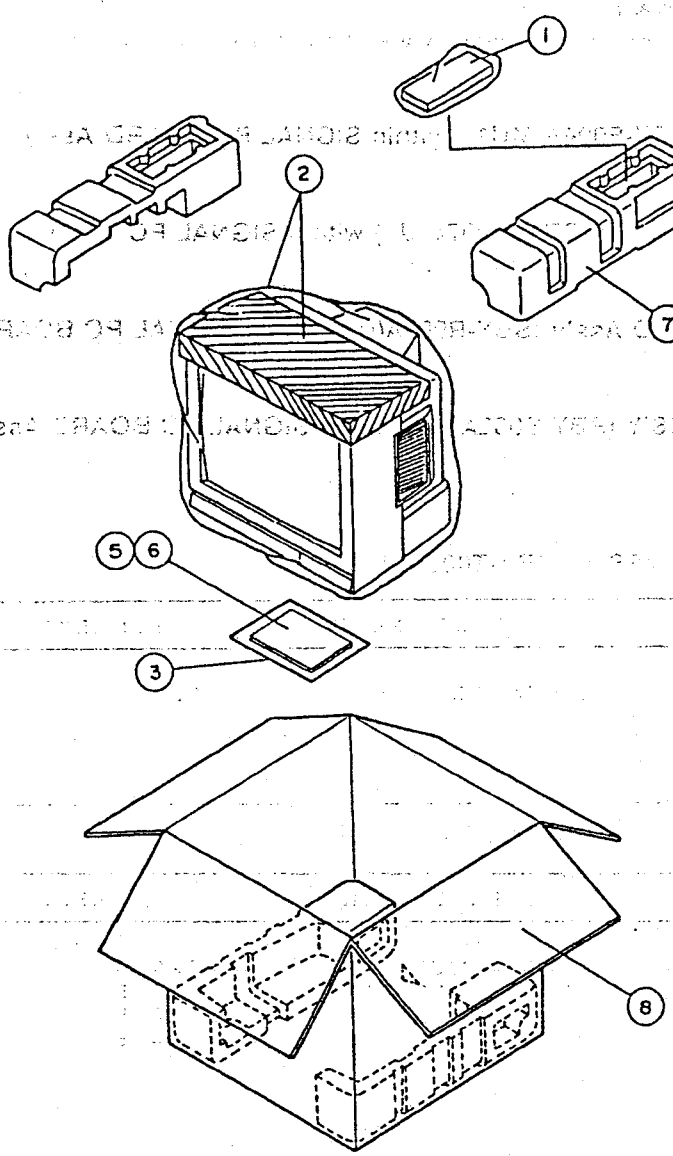
TELETEXT MODULE PC BOARD ASS'Y (SBY-T006A(U))

SYMBOL NO.	PART NO.	PART NAME	REMARKS
CAPACITOR C1016	QAT3110-300A	TRIMMER CAP	30pF

PERI MODULE PC BOARD ASS'Y (SBY-P005A(U))

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R			
R1002	QVPA601-103A	V. R (B CUT OFF)	10kΩ B
R1004	QVPA601-103A	V. R (R CUT OFF)	10kΩ B
R1006	QVPA601-472A	V. R (RGB BRIGHT)	4.7kΩ B
R1012	QVPA601-223A	V. R (RGB CONTRAST	22kΩ B

PACKING



PACKING PARTS LIST

SYMBOL NO.	PART NO.	PART NAME	REMARKS	
1	RM-C707	REMOCON		
2	CP30148-002	SET COVER		
3	CP30320-002	POLY BAG		
5	BT-20066A-E	ADDRESS CARD		*
6	CS2181ETIBA-E	INST BOOK		*
7	CP10787-00A-E	CUSHION ASSY	4pcs in 1set	*
8	CP10870-002-E	PAKING CASE		*

JVC C-S2181ET SCHEMATIC DIAGRAM

■ NOTICE

- Voltage values and waveforms are measured by respectively receiving and displaying on the screen the colour bars signals of the PAL and SECAM.
  [Voltage value display method]
  The voltage values indicated within the circuits denote those obtained when PAL colour bar signals are received and displayed on the screen. However, as for those points where the voltage values are caused to vary by input signals (SECAM); discrimination is effected by indicating as per an example [Example: (4.2 V)].
- The voltage values when receiving and displaying the PAL signal on the screen and the each mode values of the VSM & AUDIO STATUS are varied is shown in the LIST on page ④ (⇨Difference voltage list).
  Multimeter used.
  DC 20kΩ/V
  Given figures are all DC voltages.
  Sweep speed of oscilloscope
  H→20μS/div. V→5mS/div.
  Others—sweep speed specified
- Since the schematic diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

■ SAFETY

FR (—WW—FR) denotes a fusible resistor which operates as a fuse. When replacing fusible resistors and parts indicated with black shading (■) in the circuit diagrams, be sure to ensure safety by using designated parts.
As to other parts too, use designated parts to maintain safety and performance.

NOTE FOR SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (primary: ⊥) side GND and the NEUTRAL (secondary: ⏚) side GND.
Don't short between the LIVE side GND and NEUTRAL side GND or never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND at the same time.
If above note will not be kept, a fuse or any parts will be broken.

■ INDICATION OF PARTS SYMBOL

Inside board (Example) SBY-1306A R1209—R209
Outside board (Example) R0001—R01

■ SCHEMATIC DIAGRAM INDICATION

Resistor

- ○ Resistance value
  Without unit : [Ω] K : [kΩ] M : [MΩ]
- ○ Rated allowable power
  Without indication : 1/6W
  * Others Indicated
- ○ Type

Without indication	: Carbon resistor
OMR	: Oxide metal film resistor
UNFR	: Unflammable resistor
MFR	: Metal film resistor
MPR	: Metal plate resistor
FR	: Fusible resistor

* Composition resistor 1/2 [W] is indicated as 1/2S or Comp.

Capacitor

- ○ Capacitance
  Above 1 [pF] Below 1 [μF]
- ○ Withstnad voltage

Without indication	: DC 50 [V]
Others	: DC withstand voltage [V]
AC indicated	: AC withstand voltage [V]

- ○ Indications for electrolitic capacitors are as follows.
  (Example)
  47/50→capacitance [μF] /withstand voltage [V]
- ○ Type

Without indication	: Ceramic capacitor
MY	: Mylar capacitor
MM	: Metalized mylar capacitor
PP	: Polypropylene capacitor
MPP	: Metalized polypropylene capacitor
MF	: Metalized film capacitor
BP	: Bipolar electrolytic capacitor
TAN.	: Tantalum capacitor

Coil

Without unit : [μH]

Connection method

- : Connector
- : Receptacle
- : Wrapping or soldering

Power Supply

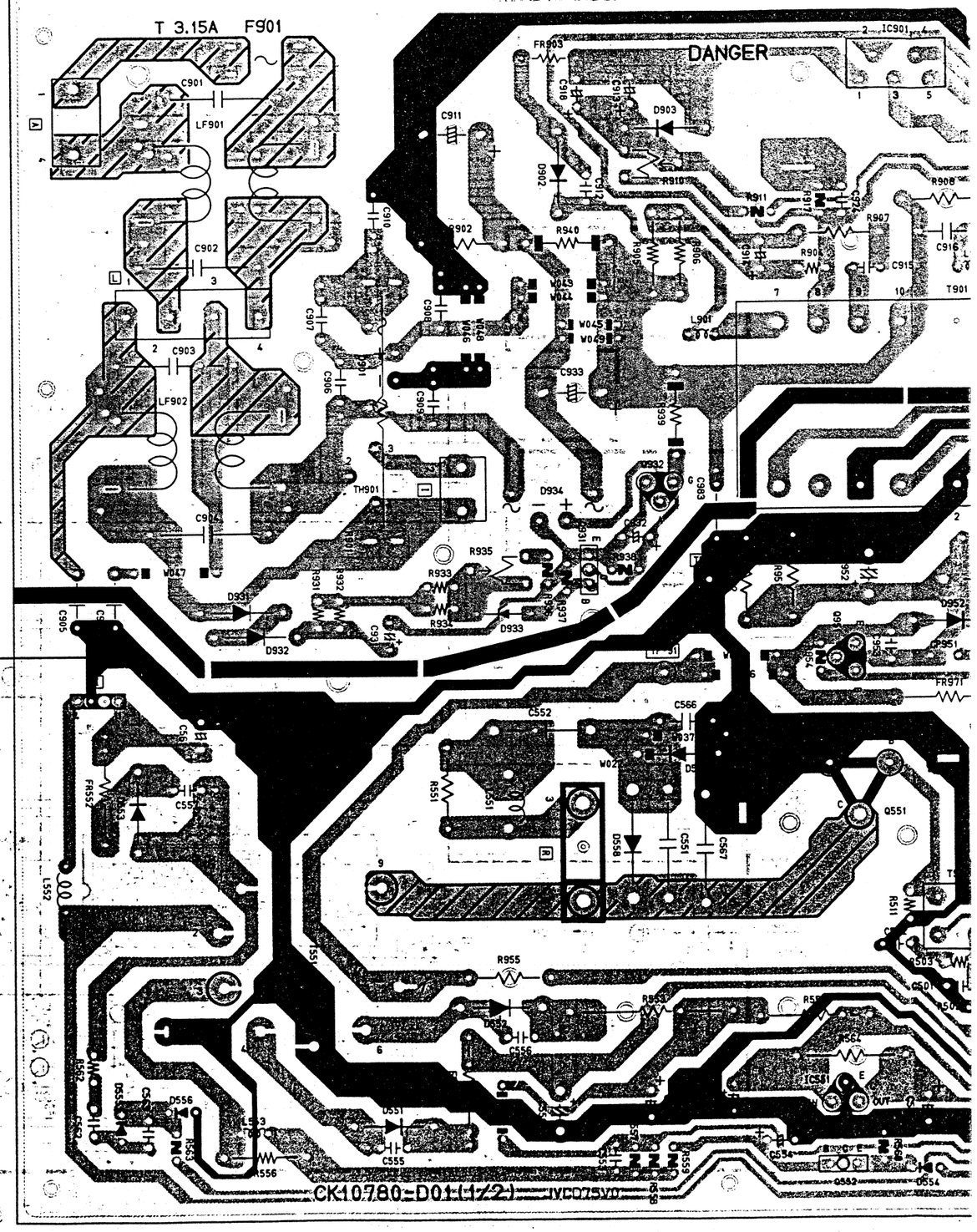
- : B_1 (115V)
- : B_2 (12V)
- : 9V
- : 5V

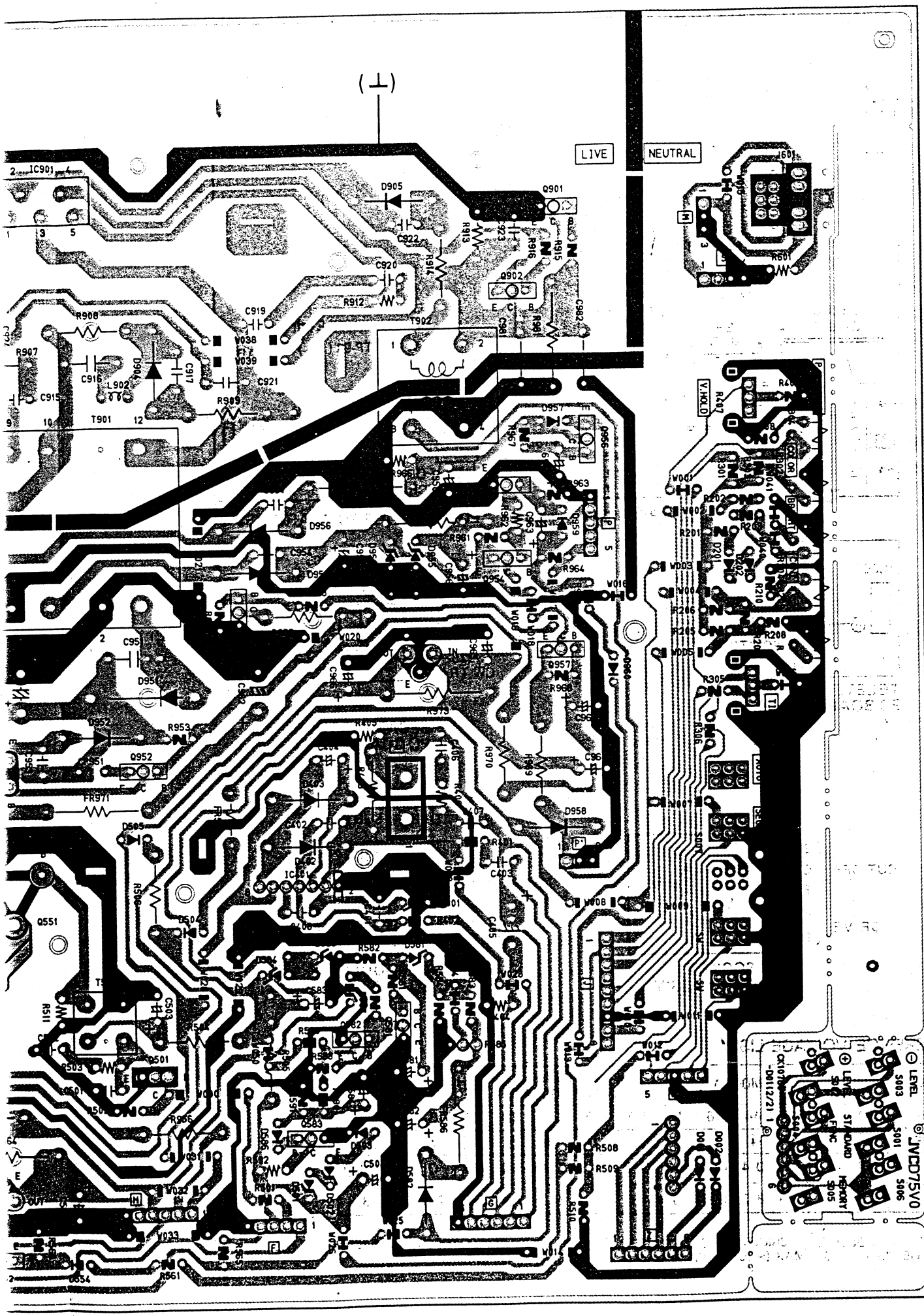
* Each voltage reading specified

Test point & GND. symbol.

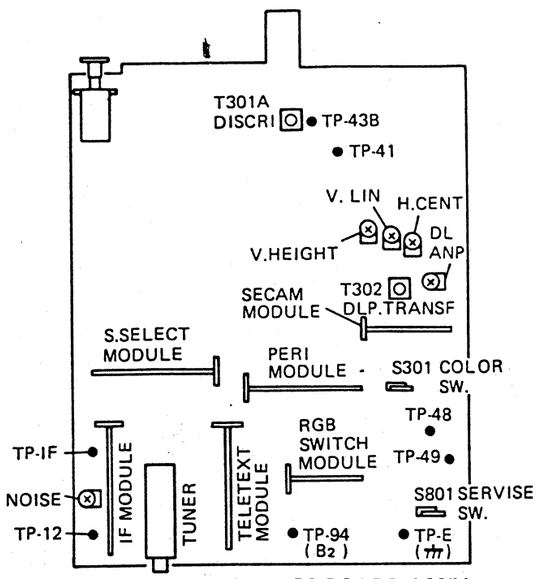
- : Test point by miniature GT pin
- : Only test point display
- ⊥ : Live (Primary) side ground
- ⏚ : Neutral (Secondary) side ground

DEF. & POWER PCB BACK PATTERN

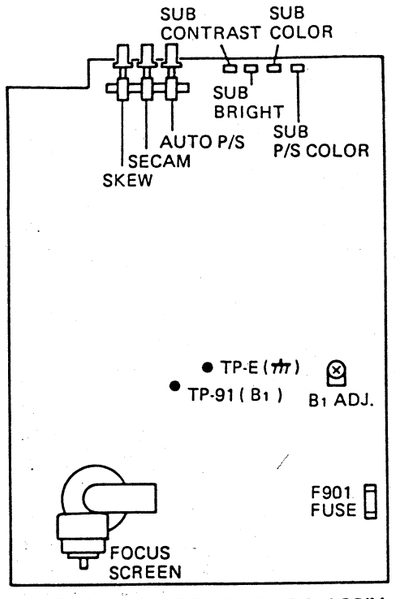



LIVE
NEUTRAL
IC901
D905
Q901
C922
C920
R912
T902
R908
C919
R907
C916
C917
C921
C915
L902
T901
R909
D957
R963
D956
R964
V.HOLD
R201
R202
R210
R208
R305
R306
D957
R968
D958
R970
FR971
Q952
R953
D952
D951
D950
Q551
R511
R503
R501
R506
R508
R509
R561
Q554
R601
J601
LEVEL
CX1070
D012/21
STANDARD
HEIGHT
SW03
SW04
SW05
SW06
JVC075V0

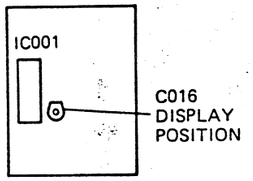
ALIGNMENT LOCATION



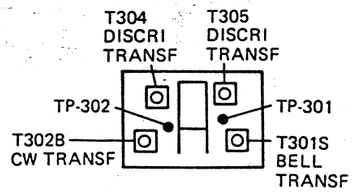
SIGNAL PC BOARD ASS'Y



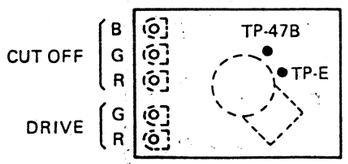
POWER & DEF PC BOARD ASS'Y



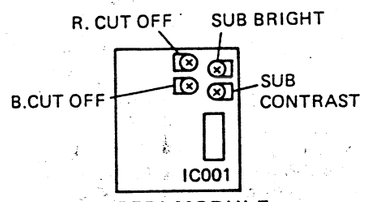
TELETEXT MODULE
PC BOARD ASS'Y



SECAM MODULE
PC BOARD ASS'Y



CRT SOCKET
PC BOARD ASS'Y



PERI MODULE
PC BOARD ASS'Y

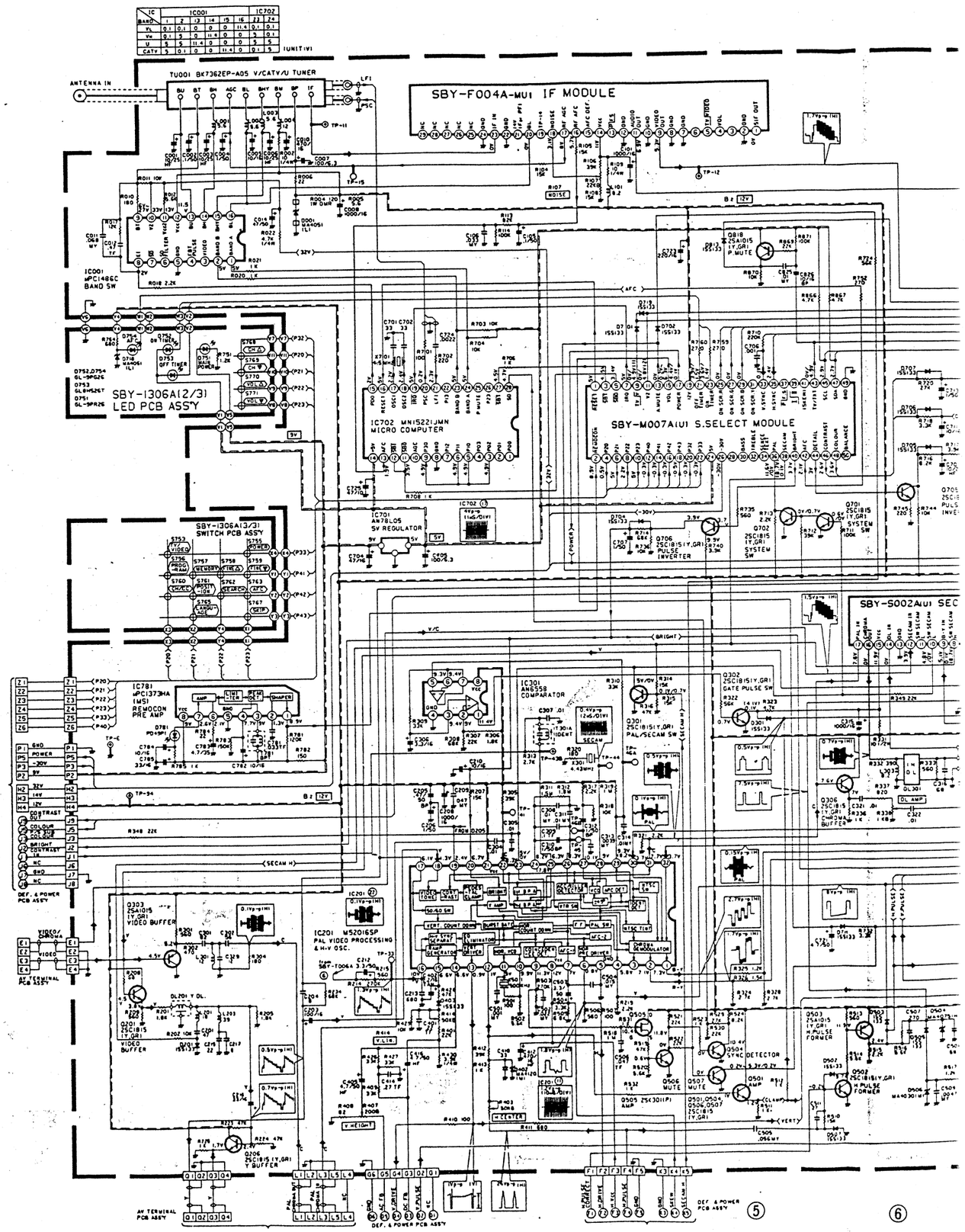
■ DIFFERENCE VOLTAGE LIST

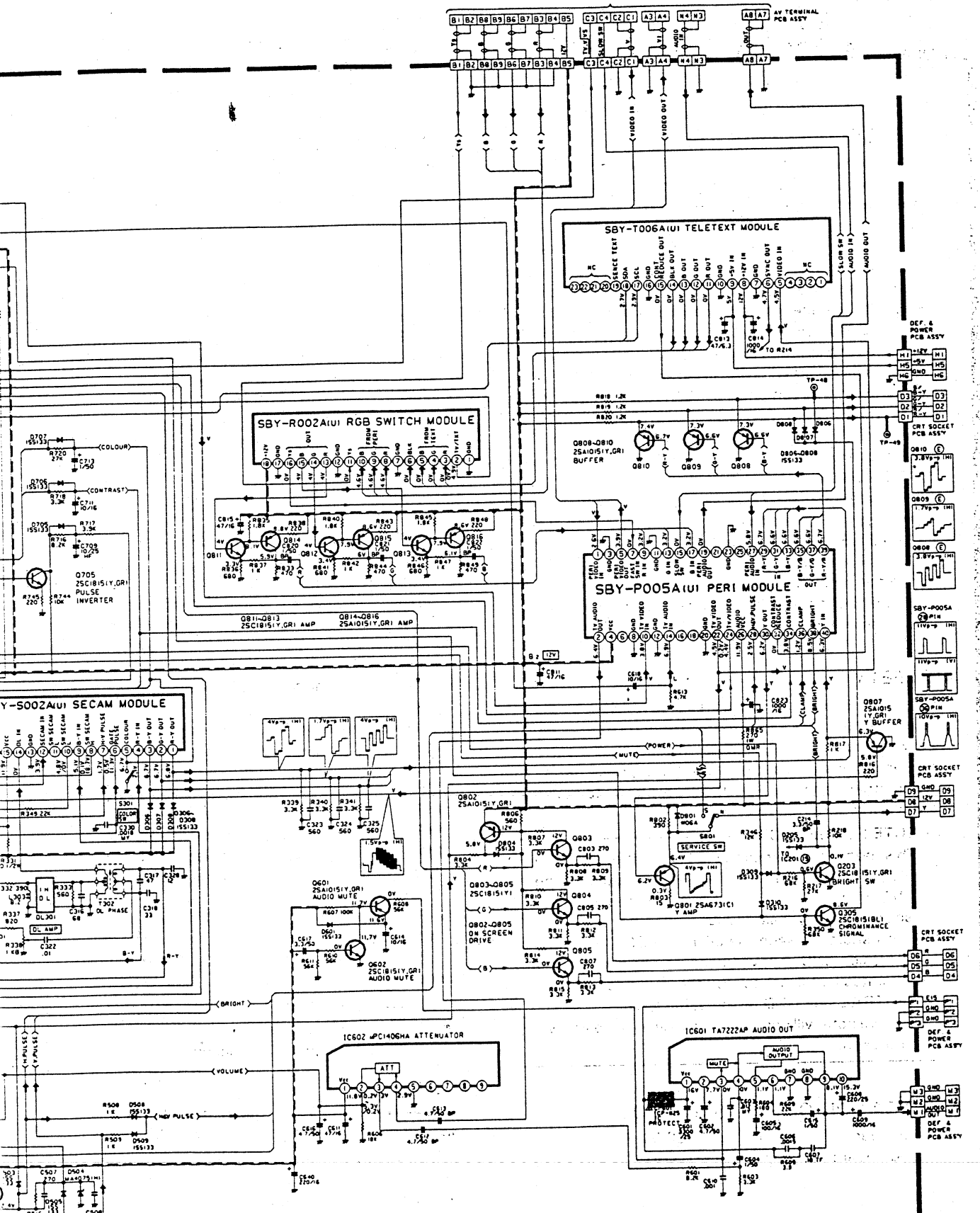
(UNIT=V)

SYMBOL	SBY-M007A							S8Y-S002A	SBY-P005A(U)		IC201	Q706		
PIN No.	30	32	40	44	46	48	50	5	34	38	25	B	C	E
MODE	⑤	⑥	②	④	③	①	⑦	①	③	②	③	②	②	②
VOLTAGE	0.1 ~ 4.6	0.1 ~ 4.2	0 ~ 7.9	0.4 ~ 8.2	0.6 ~ 6.5	0.2 ~ 9	0.1 ~ 4.6	1.7 ~ 9.2	2.1 ~ 6.3	5.2 ~ 7.4	5.7 ~ 6.9	0 ~ 7.9	0.6 ~ 7.5	11.9 ~ 8.3

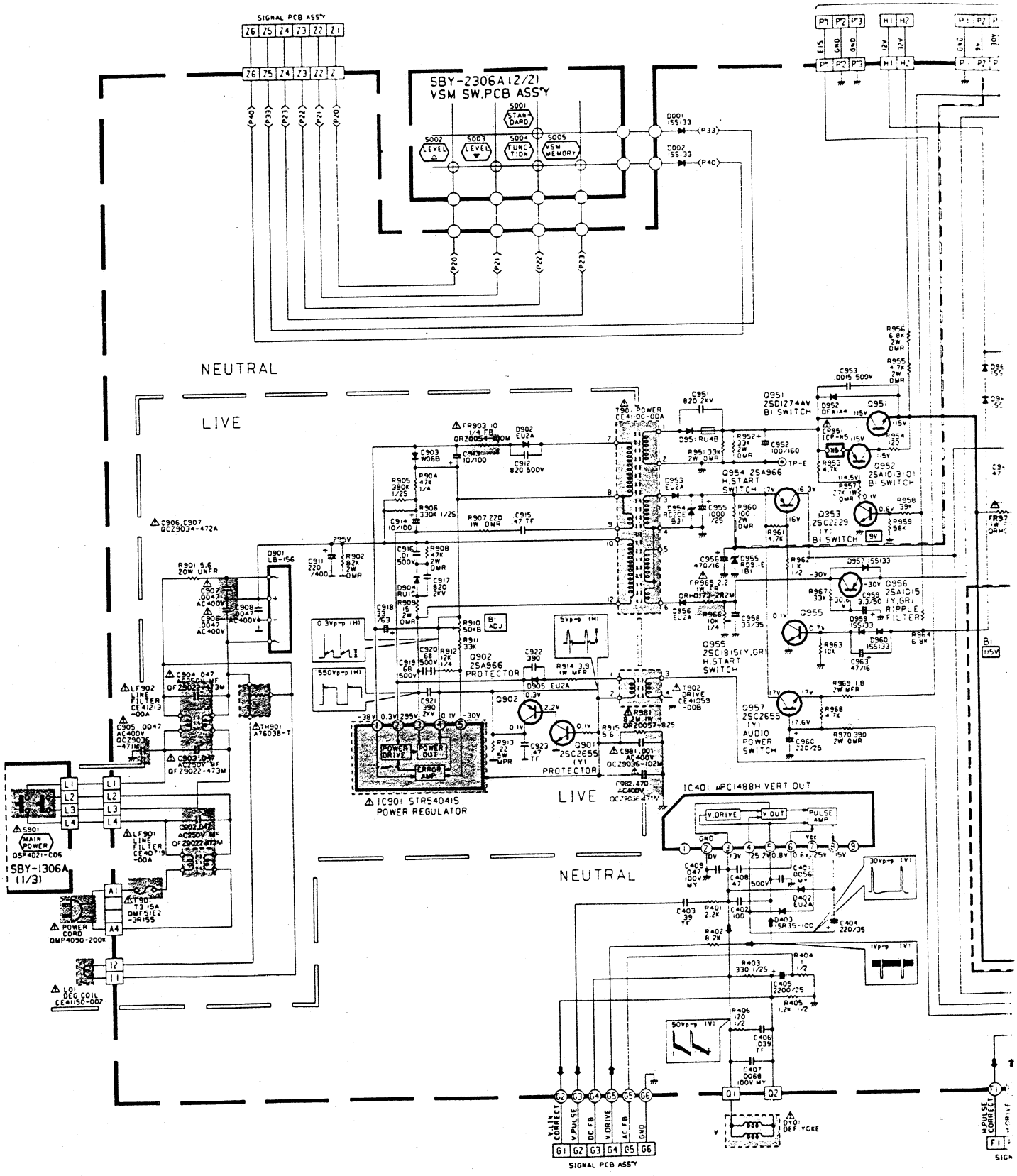
*NOTICE
- MODE : ①=COLOUR, ②=BRIGHT, ③=CONTRAST, ④=DETAIL, ⑤=BASS, ⑥=TREBLE, ⑦=BALANCE
- VOLTAGE=MIN [-30]~MAX [+30] (ONLY 'BALANCE'=LEFT [L]~RIGHT [R])

SIGNAL SCHEMATIC DIAGRAM




SBY-T006A(U) TELETEXT MODULE
SBY-R002A(U) RGB SWITCH MODULE
SBY-P005A(U) PERI MODULE
SBY-S002A(U) SECAM MODULE
AV TERMINAL PCB ASSY
DEF. & POWER PCB ASSY
CRT SOCKET PCB ASSY
Q705 2SC1815(Y,GR) PULSE INVERTER
Q811~Q813 2SC1815(Y,GR) AMP
Q814~Q816 2SA1015(Y,GR) AMP
Q808~Q810 2SA1015(Y,GR) BUFFER
Q807 2SA1015 (Y,GR) Y BUFFER
Q801 2SA673(C) Y AMP
Q802 2SA1015(Y,GR)
Q803~Q805 2SC1815(Y)
Q802~Q805 ON SCREEN DRIVE
Q601 2SA1015(Y,GR) AUDIO MUTE
Q602 2SC1815(Y,GR) AUDIO MUTE
Q203 2SC1815(Y,GR) BRIGHT SW
Q305 2SC1815(BL) CHROMINANCE SIGNAL
IC602 μPC1406HA ATTENUATOR
IC601 TA7222AP AUDIO OUT
SERVICE SW
DL AMP
OL PHASE
SBY-1306A(1/3)
SIGNAL PCB ASS'Y

POWER & DEF. SCHEMATIC DIAGRAM



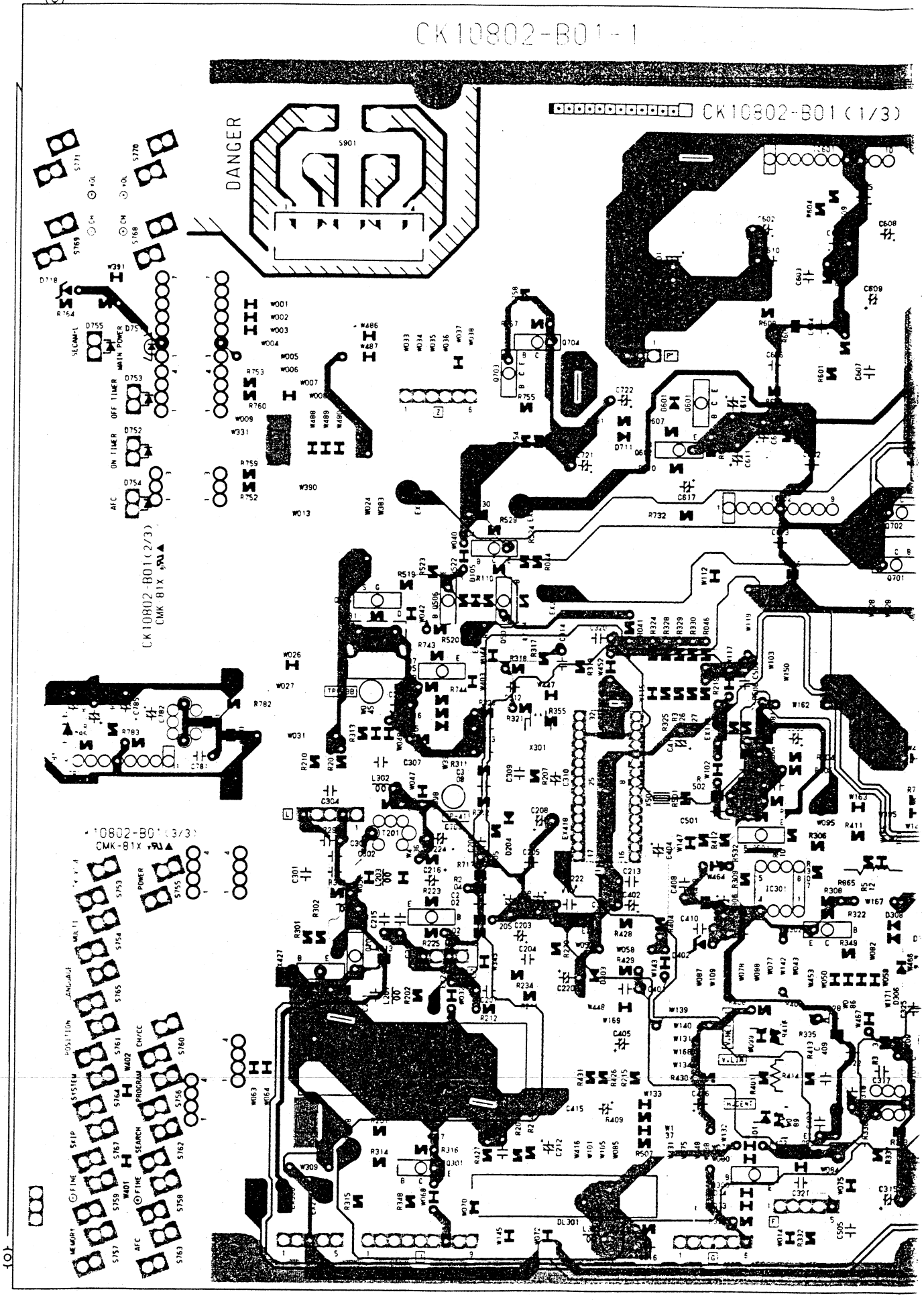
A/V TERMINALSCHEMATIC DIAGRAM

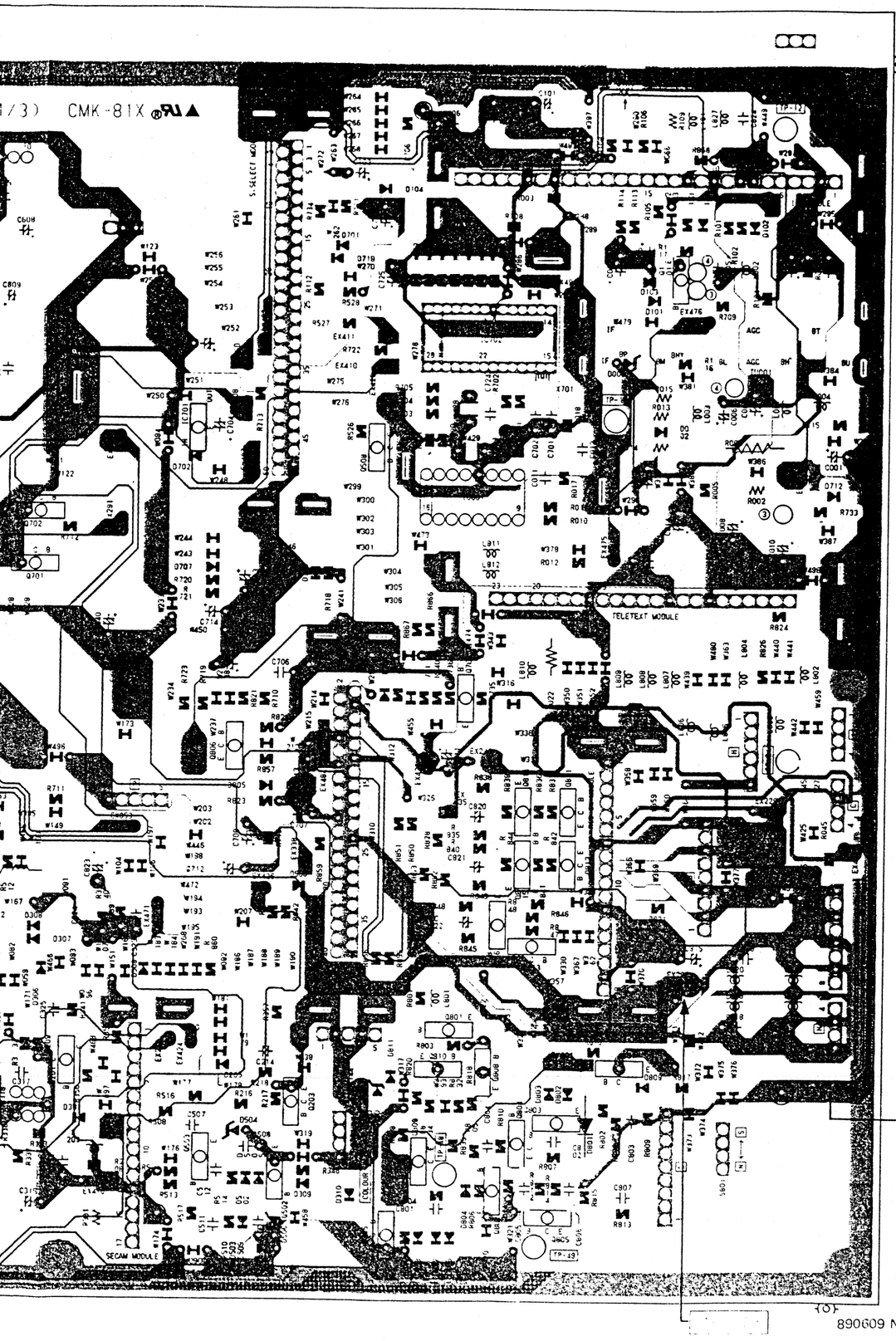
SBY-3056A
CRT SOCKET
PCB ASS'Y

SBY-2306A(1/2)
DEF.& POWER PCB ASS'Y

SBY-7004A(U)
A/V TERM. PB ASSY

SIGNAL PCB BACK PATTERN




CMK-81X
TELETEXT MODULE
SECAM MODULE
S-SELECT MOD
TUNER
IF
AGC
BT
BU
BM
BK
BL
BMY
TP-12
TP-19
R824
R733
R387
R709
R002
R013
R015
R010
R012
R011
R803
R804
R805
R806
R807
R808
R809
R810
R811
R812
R813
R814
R815
R816
R817
R818
R819
R820
R821
R822
R823
R825
R826
R827
R828
R829
R830
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R840
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R848
R849
R850
R851
R852
R853
R854
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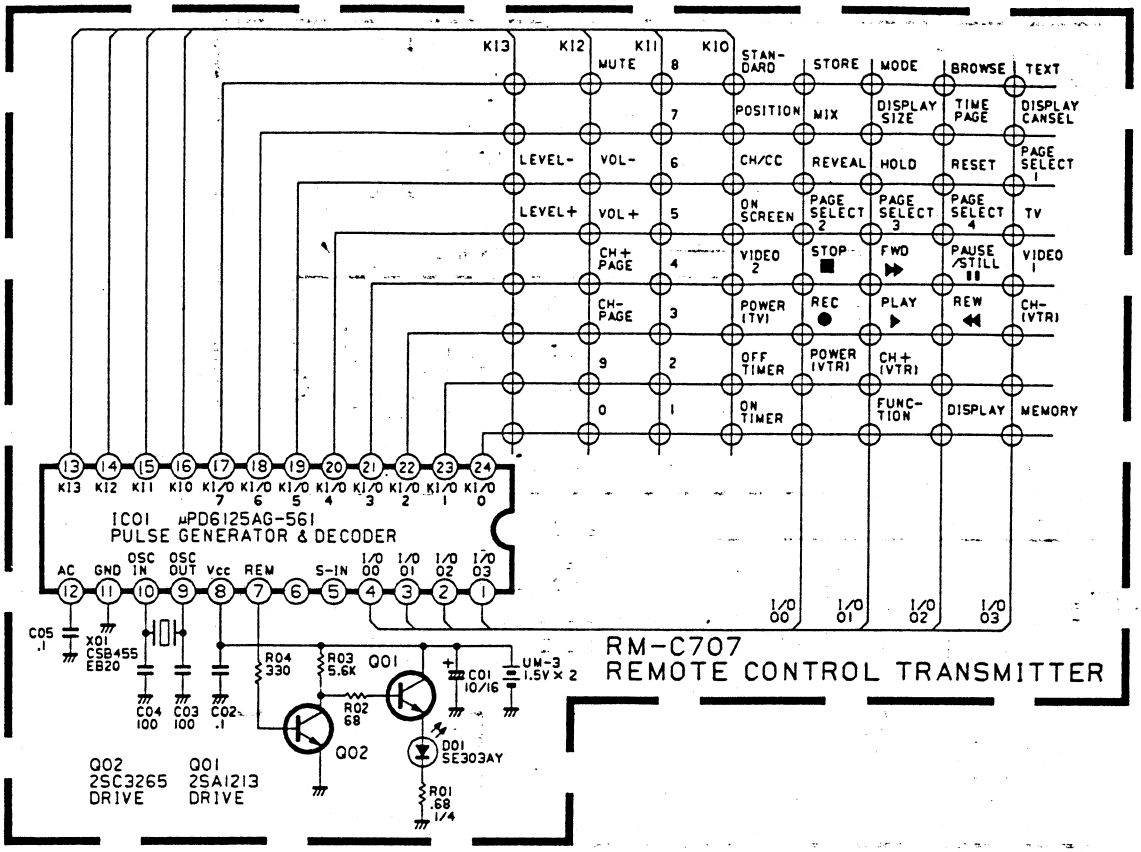
R856
R857
R858
R859
R860
R861
R862
R863
R864

REMOCON SCHEMATIC DIAGRAM



Basing of Transistor & ICs

2SA673(C)
2SA1015(Y,GR)
2SC1815(Y,GR)
2SC1627A

2SC1013(O)
2SC2655(Y)
2SA966
2SC1360
2SC2229(Y)

2SC3668(Y)
2SC3669(O,Y)
2SA1428(O,Y)

2SD1266A(P,Q)
2SD1273A
2SD1274AV

2SK301(O,P)

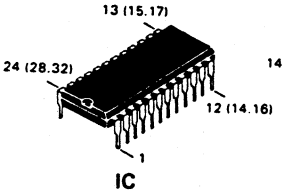
2SC2068

2SC4237

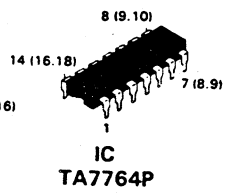
2SD1545

IC
AN78L05

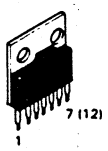
IC
μPC7812HF
μPC7805HF



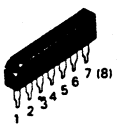
IC
M52016SP
MN15221JMN



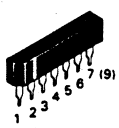
IC
TA7764P
TC4066BP
μPC1486C



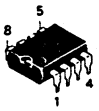
IC
TA8200AH



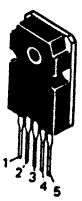
IC
μPC1373HA(MS)



IC
AN5900



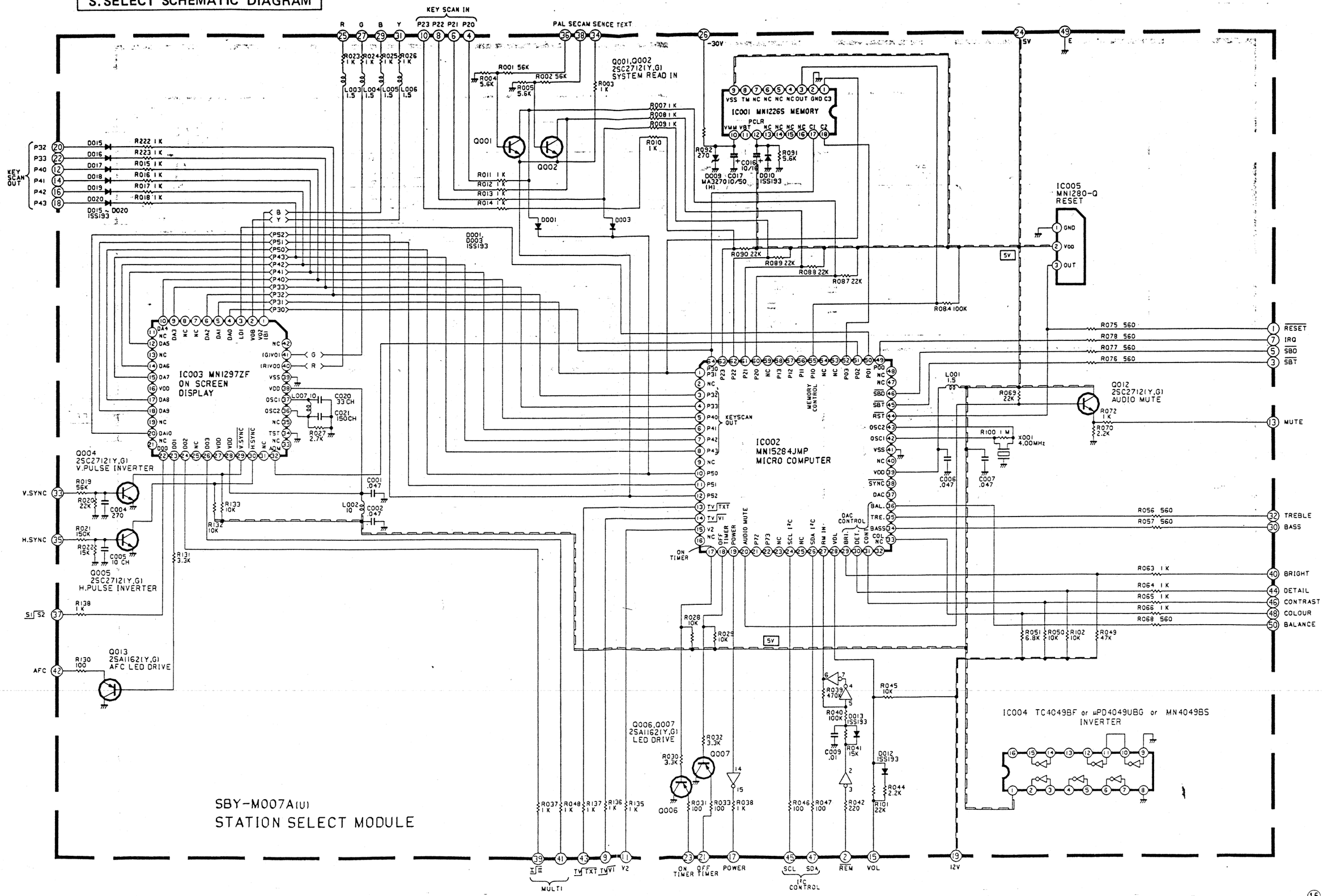
IC
AN6558



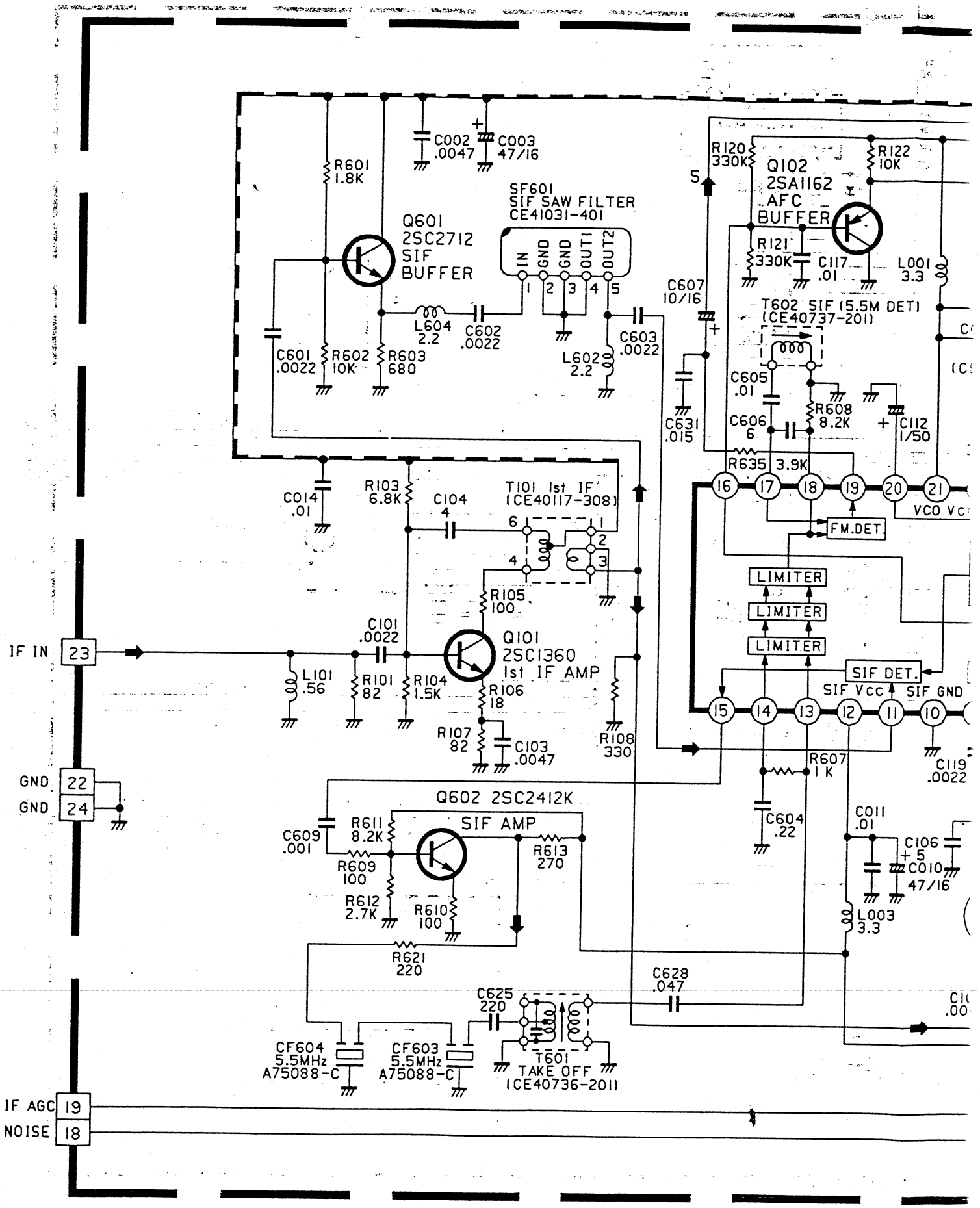
IC
STR10006-A

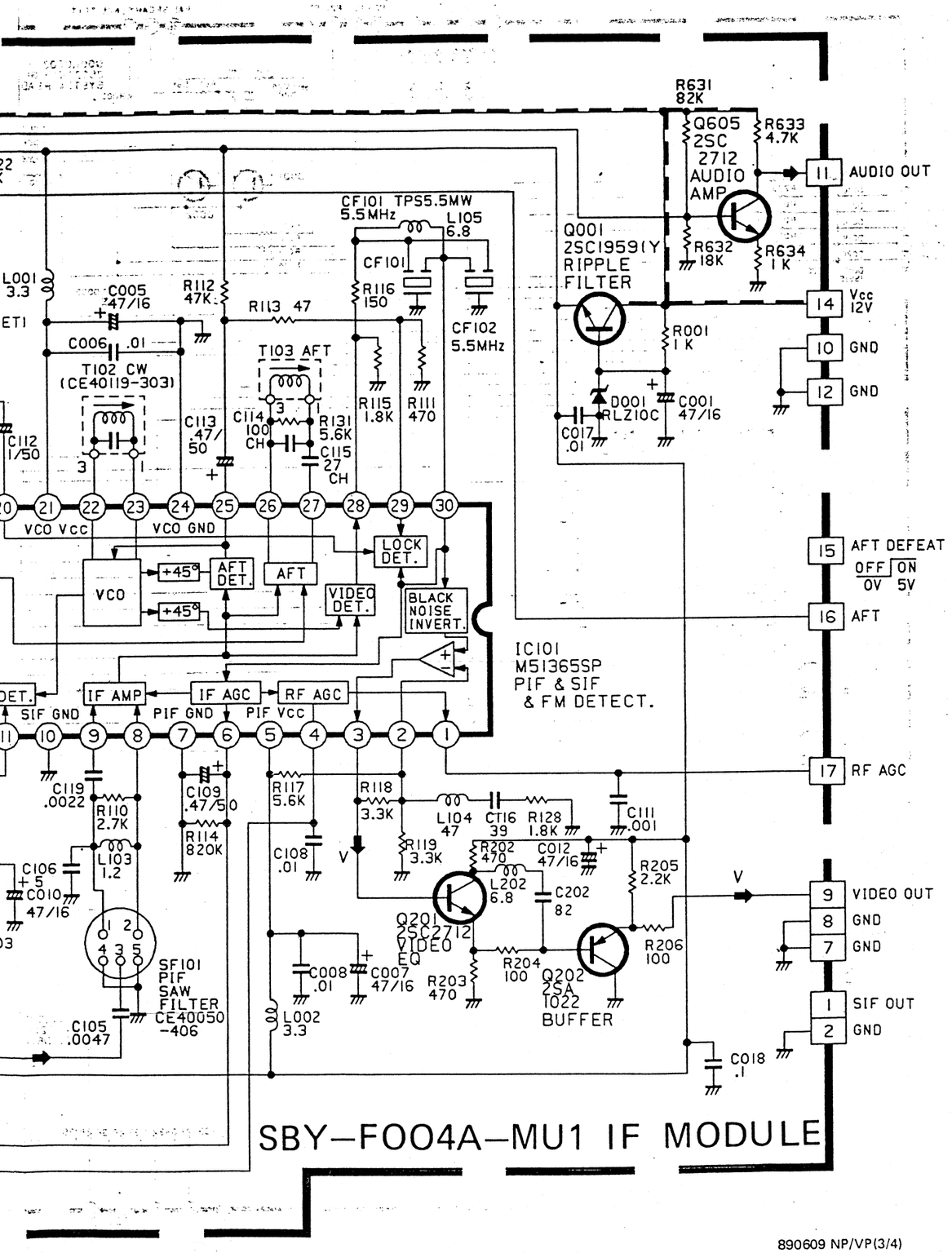
IC
μPC1498H

S.SELECT SCHEMATIC DIAGRAM



I.F. MODULE SCHEMATIC DIAGRAM

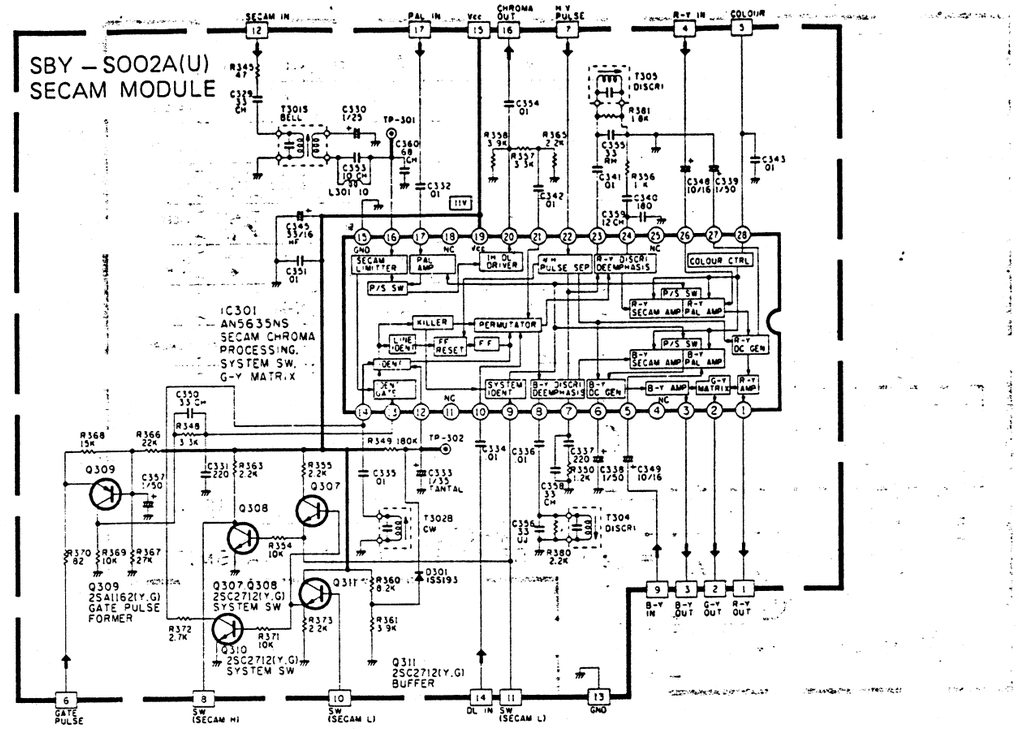




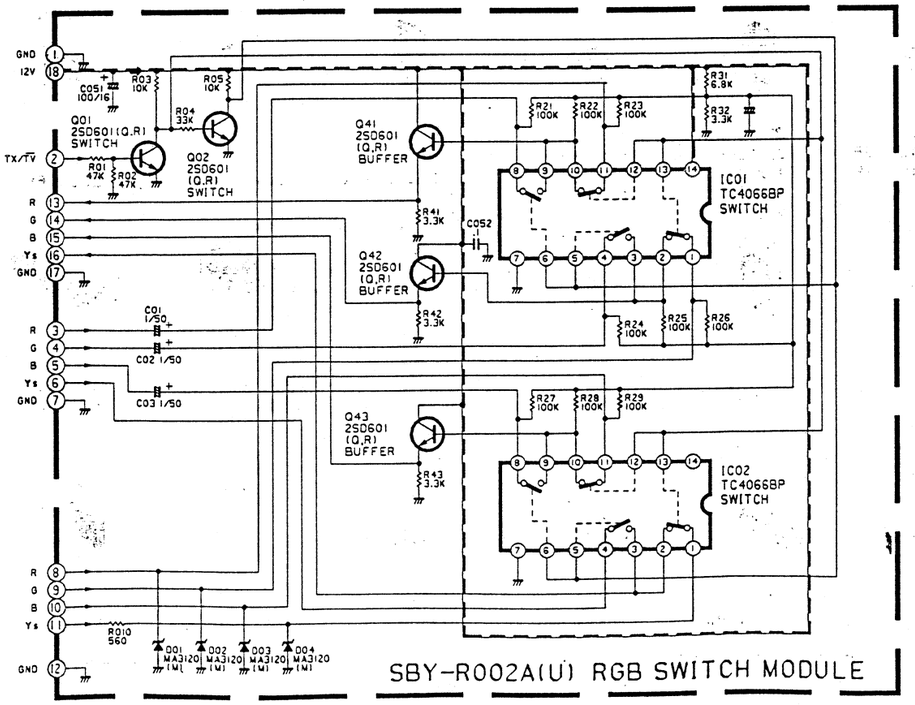
SBY–F004A–MU1 IF MODULE

890609 NP/VP(3/4)

SECAM MODULE SCHEMAIC DIAGRAM



RGB SWITCH SCHEMATIC DIAGRAM



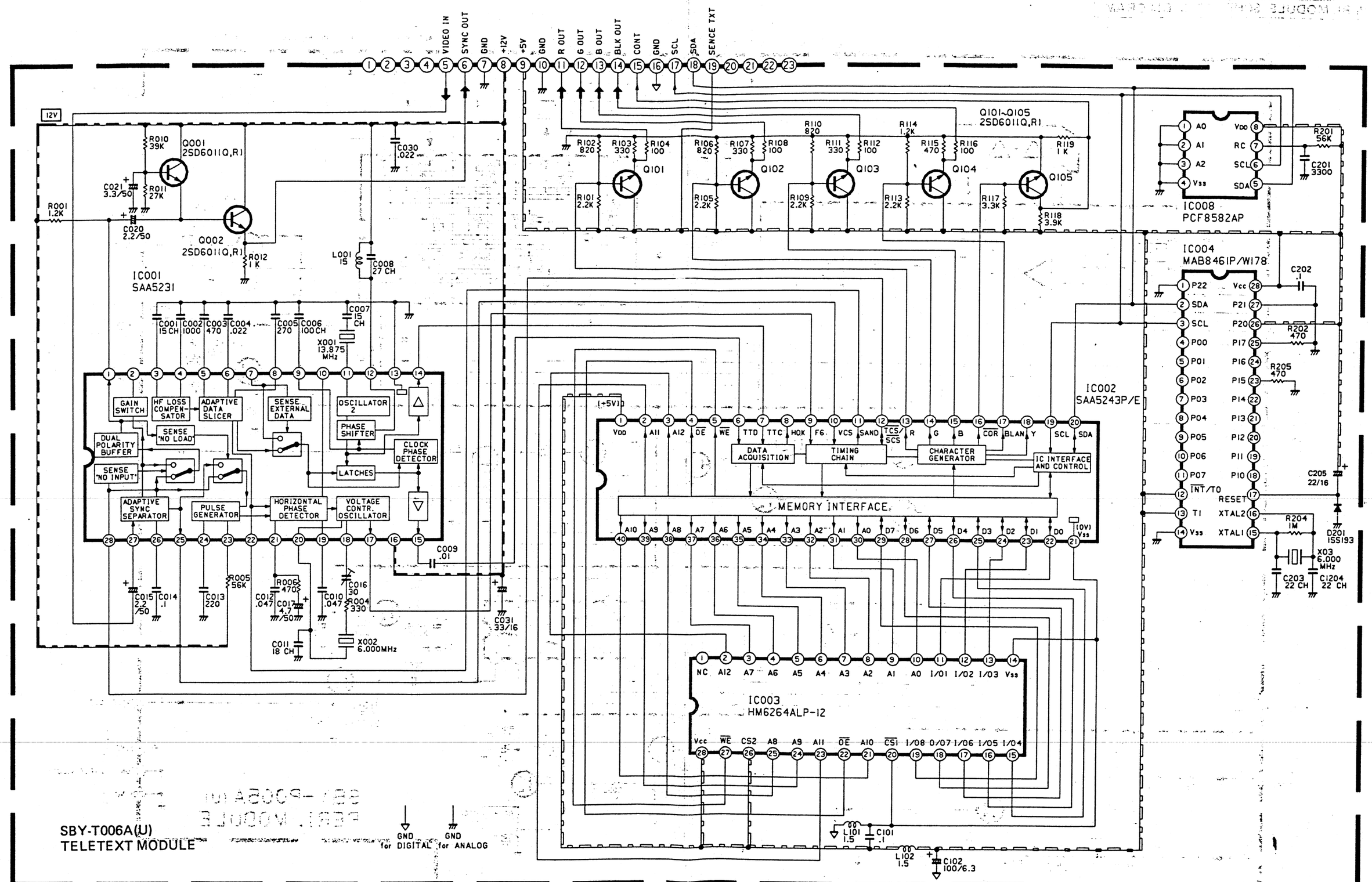
SBY–R002A(U) RGB SWITCH MODULE

PERI. MODULE SCHEMATIC DIAGRAM

OUT
IN(TV)
IN(PERI)
GND(FOR RGB)
FAST SW B G R CONT REDUCE
Y B-Y G-Y R-Y
B/B-Y G/G-Y R/R-Y
IC002 AN6551 AMP
IC001 AN5352N RGB AMP, RGB/TV SWITCH
B/B-Y SW OUT
B CLAMP
G/G-Y SW OUT
G CLAMP
R/R-Y SW OUT
R CLAMP
RGB/TV SWITCH
Y SW OUTPUT
BRIGHTNESS CONTROL
B PEDESTAL ADJUSTMENT
R PEDESTAL ADJUSTMENT
CLAMP PULSE GEN.
SHADOW GEN.
BLANKING
CONTRAST CONTROL
PEDESTAL CLAMP
B AMP
G AMP
R AMP
RGB BRIGHT
RGB CONTRAST
B CUT OFF
R CUT OFF
IC002 (2/2) AN6551
IC002 (1/2) AN6551
BRIGHT (5V ~ 7.5V)
CONTRAST (2V ~ 6.1V)
Q101 ~ Q105 2SD601(Q,R) SWITCH
Q003 2SD601(Q,R) BUFFER
Q001 2SD601(Q,R) BUFFER
Q041 2SD601 (Q,R) AMP
Q042 2SD601 (Q,R) BUFFER
Q043 2SD601 (Q,R) BUFFER
Q045 2SD601 (Q,R) BUFFER
Q046 2SD601 (Q,R) CLAMP
Q047 2SD601 (Q,R) BUFFER
Q071 2SD601(Q,R) BUFFER
D002 MA3047(L)
D005 ~ D007 MA3150(M)
D009 MA157
D101 MA3039(H)
D102 1SS193
IC071 TC4066BP TV/PERI AUDIO SWITCH
IC041 TC4066BP TV/PERI VIDEO SWITCH
B2 12V
12V
+12V (FOR VIDEO)
+12V (FOR AUDIO)
GND (FOR AUDIO)
TV/V
SLOW SW
BRIGHT
CONTRAST
AUDIO IN (PERI)
AUDIO OUT (PERI)
AUDIO OUT (TV)
AUDIO IN (TV)
VIDEO IN (TV)
VIDEO OUT (PERI)
VIDEO IN (PERI)
VIDEO OUT (TV)
CLAMP
H.V BLANKING
GND
(FOR V.OUT)

SBY-P005A(U)
PERI. MODULE

TELETEXT MODULE SCHEMATIC DIAGRAM



SBY-T006A(U)
TELETEXT MODULE